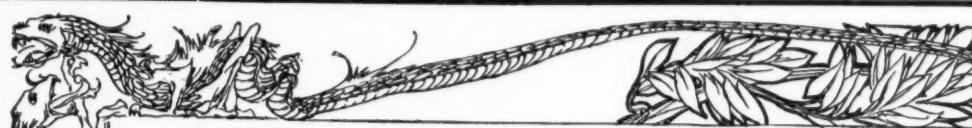


MOTOR AGE

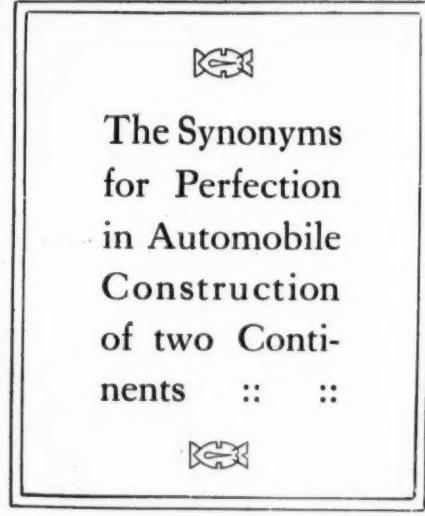
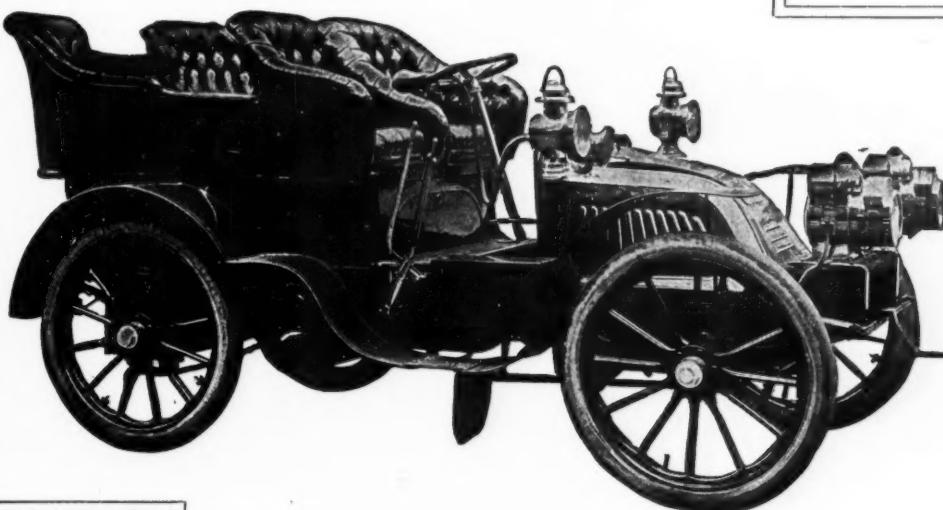
Vol. 3 No. 21

MAY 21, 1903

Five Cents



Highest-class Automobiles

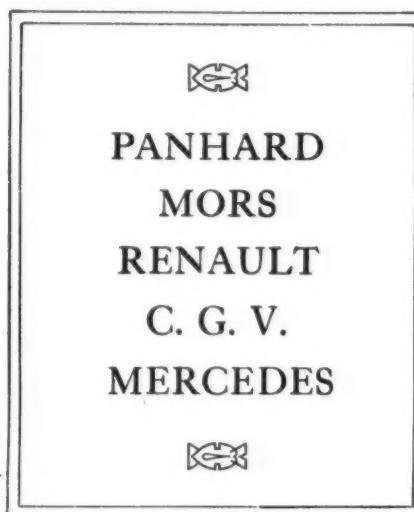


The Synonyms
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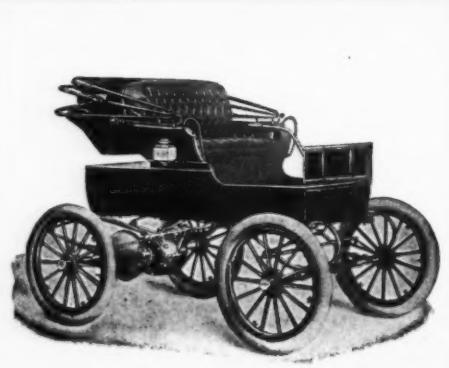


NATIONAL ELECTRIC VEHICLES



Model 50. Price \$950

One of our most popular models. Curved panels and dash together with special electrobile body make this a ready seller.



Model 65. Price \$1000

A favorite for all round use. Much admired by the ladies. Elegantly finished and luxurious upholstering.



Model 75. Price \$1000

Choice of physicians and others wishing ease of entering and alighting.



Model 85 Stanhope. Price \$1500

For style it is in a class apart from all others. Massive, substantial, luxurious.



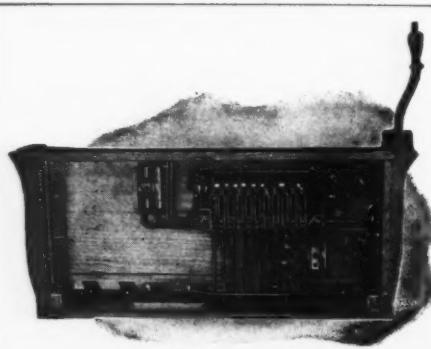
Model 100. Price \$1200

This is the long distance record breaker. Fitted with thirty-six large cells of Western Battery, it is the most powerful of all electric runabouts.



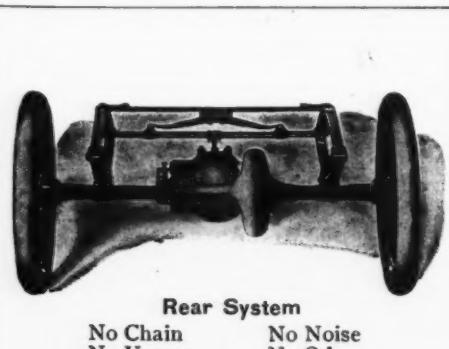
Model 110. Price \$1250

This is our four-passenger vehicle. Practical for either two or four persons. Meets the demand for a convertible two or four passenger Auto.



Controller

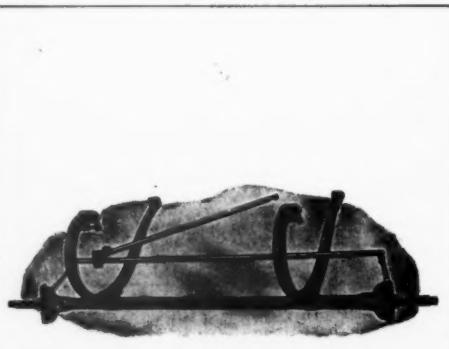
This one lever starts, stops and reverses a National; gives four speeds in either direction. No grease nor gears. A child can operate it with ease and perfect safety.



Rear System

No Chain No Noise
No Vapor No Odor
No Vibration

Just an electric motor and axle, all inclosed and extremely simple, all motion rotary. Always under complete control, safer in fact than a family horse.



Front System

When you see these springs you know it's a National. Strength, comfort and beauty are combined in this part. Examine both front and rear systems of the National before you invest.

Live Representatives wanted in unassigned territory. Write for catalogue and terms.

NATIONAL MOTOR VEHICLE COMPANY

2100 East Twenty-second Street,

INDIANAPOLIS, INDIANA

MOTOR AGE

VOL. III. NO. 21.

MAY 21, 1903.

\$2.00 Per Year

REVOLUTIONIZING MODERN COMMERCE

Here are two pictures—one of today and real, and the other of tomorrow and caught with the camera of mental perspective. One shows what is—the other what may be. One shows what the horse does for the community that feeds him—the other shows what the automobile can do for the community that adopts it.

One presents a condition that is deplorable, although commonplace. Here in the midst of modern enterprise; co-operating with the great modern facilities for accomplishing work for developing the industries of the nation; here where those great, often mentioned wheels of commerce roll unremittingly toward the limitless goal of expansion and improvement; here where the city's pantograph of action traces the industrial map of a continent; here where men rush and toil and appliances strain and tug to quicken the pace of business; here where the keen activity of the twentieth century is focused upon one picture screen, the horses plod along much as they plodded upon Mount Ararat and slowly drag their burdens, much as they dragged them when Moses was in his prime and the children of Israel surveyed the Promised Land. Backward and forward, in and out, tangled and jostling, tug-

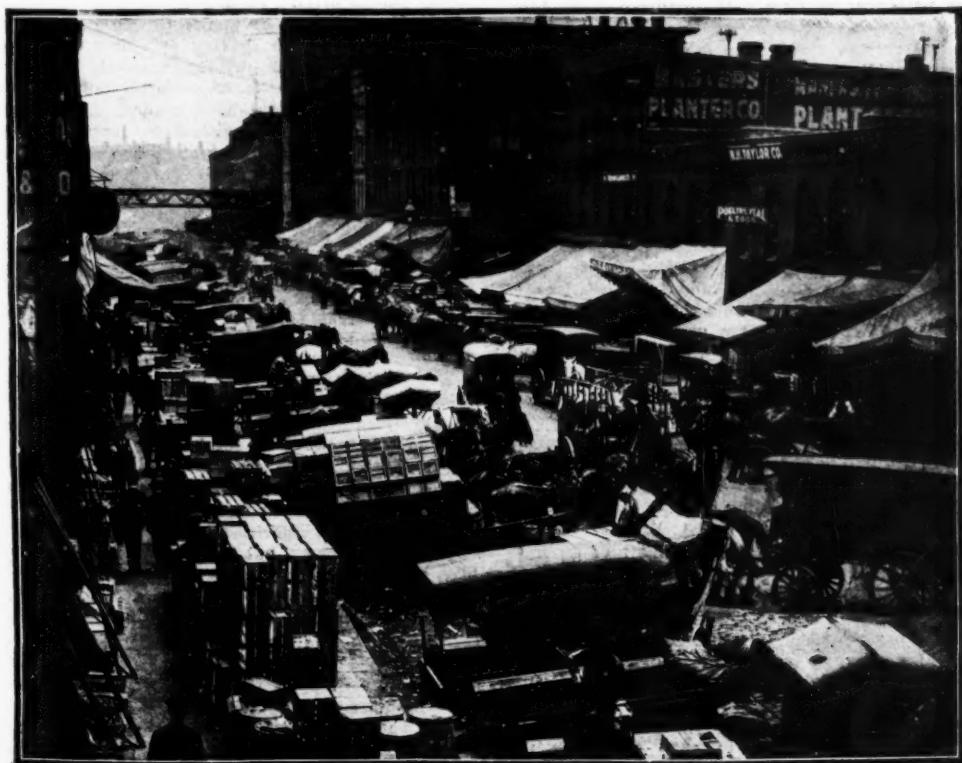


Nineteen Hundred and Three

COURTESY CHICAGO TRIBUNE

MOTOR AGE

Nineteen Hundred and ——



ging and halting, whipped and faltering the good old beast of burden does the best he can to move man's products about, only to create a condition in which the progress of centuries upon centuries must tarry for a transfer system that is but little better or more effective than it was at its beginning. Congestion, filth, delays and endless confusion mark the transfer of the city's freight.

The other picture, while somewhat idealistic, is based upon this very simple and reasonable assumption—automobiles can transport goods in twice the quantity in half the time and occupy individually one-half the street area necessary for horse drawn conveyances. Three out of every four of the commercial vehicles are removed from the business streets. The remaining one occupies one-half or thereabouts of the street area of a horse drawn wagon, producing a final and total saving of seven-eighths in street area occupied by the freight transfer means.

It is an attractive proposition and not as elusive as might be imagined by one set in the ways of forefathers and conventionality. It means simply the doubling of power and speed and the removal of the motor from a position necessitating extra street area.

BAILEY BILL SIGNED—WILL BE TESTED

Automobilists of New York Somewhat Surprised When Gov. Odell Attaches His Signature to the Undesirable Measure—Plans Formulating for Taking It Speedily Into Court—Its Ability to Hold Good Doubted

New York, May 17—Governor Odell has by his signature made a law of the Bailey bill, notwithstanding the protests of clubs, trade associations and individual automobilists all over the state, including the members of the Automobile Club of America, despite its acceptance as a compromise measure by President Shattuck and the law committee.

READY TO TEST THE LAW

Indignant at its unreasonableness and confident of the unconstitutionality of many of its provisions, automobilists now propose to fight it out to the bitter end in the courts. The N. A. A. M. officials will meet early in the week to decide on a plan of campaign. The A. C. A. governors and the dealers' association are to have meetings on Friday. On all hands the talk is of test cases to be instituted at once and carried through the courts. It is probable that steps will also be taken to insure the enforcement of the speed ordinances against the horsemen that the discrimination against automobilists may be shown.

TRADE FEELS THE BLOW

Dealers say the bill is already hurting trade and that many prospective customers are delaying purchases until they see just how the new law will work out.

William C. Whitney and other able lawyers insist that the old penal code will remain in force until local ordinances are passed and that Judge Church is wrong in saying that no speed limit whatever will be in force until local ordinances are passed establishing them.

TROUBLE OVER NUMBERS

Hundreds of New York vehicles bear New Jersey registry numbers. This will cause untold confusion in identification. When the New York numbers are taken out the same mix up of identity will occur in New Jersey. The law of neither of these states requires the initials of the state to accompany the registry numbers as the Connecticut statute sensibly provides.

Some predict that no attempt will be made to enforce the law. It is quite certain, though, that the enemies of the automobile will make good use of the means of annoyance the Bailey law has placed at their disposal. There will be in any event misunderstanding and misinterpretation of the law, which, added to reported test cases, seem likely to bring about endless confusion.

THE BAILEY BILL

SECTION 1—Section 163, of chapter 568, of the laws of 1890, entitled "An act in relation to highways, constituting chapter 19 of the general laws," as amended by chapter 531 of the laws of 1901, is hereby amended to read as follows:

SECTION 163—Entitled to free use of highways.—The commissioners, trustees, or other authorities having charge or control of any highway, public street, park, parkway, driveway or place, shall have no power or authority to pass, enforce or maintain any ordinance, rule or regulation by which any person using a bicycle or tricycle, an automobile or motor vehicle, whether the same be propelled by steam, gasoline, electricity or other source of energy, shall be excluded or prohibited from the free use of any highway, public street, avenue, roadway, driveway, park, parkway or place, at any time when the same is open to the free use of persons having and using other pleasure carriages, except upon such driveway, speed-

way or road as has been or may be expressly set apart by law for the exclusive use of horses and light carriages. The board of supervisors of any county may adopt ordinances, not inconsistent herewith, regulating the speed of automobiles or motor vehicles on the country roads, highways or streets of said county, outside the limits of cities.

No ordinance, rule or regulation adopted by the authorities of any city, in pursuance of this section, or of any other law, shall require an automobile or motor vehicle to travel at a slower rate than 8 miles per hour within the closely built up portions of such city, nor at a slower rate of speed than 15 miles per hour where the houses in such city upon any highway are more than 100 feet apart. No ordinance, rule or regulation adopted by the authorities of any municipality, in pursuance of this section, or of any other law, shall require an automobile or motor vehicle to travel at a slower rate of speed than 20 miles per hour within any town or village outside of the territory within which the speed is restricted by the latter part of this section. An ordinance adopted by a board of supervisors in pursuance of this section, regulating the rate of speed of automobiles or motor vehicles on the highways or streets of such county outside of cities shall supersede any such ordinance in such county adopted by the authorities of a town or village. But nothing herein shall prevent the passage, enforcement or maintenance of any regulation, ordinance or rule regulating the use of bicycles or tricycles in highways, public streets, driveways, parkways or places, or the regulation of the speed of carriages, vehicles, engines, automobiles or other motor vehicles in public parks and upon parkways and driveways in the city of New York, under the exclusive jurisdiction and control of the department of parks of said city nor prevent any such commissioners, trustees or other authorities in any other city from regulating the speed of any vehicle herein described in such manner as to limit and determine the proper rate of speed with which such vehicles may be propelled, nor in such manner as to require, direct or prohibit the use of bells, lamps and other appurtenances, nor to prohibit the use of any vehicle upon that part of the highway, street or parkway, commonly known as the footpath or sidewalk. No automobile or motor vehicle propelled by steam, gasoline, electricity or other source of energy shall pass a person driving a horse or horses, or other domestic animal, or foot passenger walking in the roadway of the highway, or cross an intersecting main highway, at a greater rate of speed than 8 miles per hour, nor pass a public school, on the days when school is held, between the hours of 8 o'clock a. m. and 4 o'clock p. m., or pass a building of public worship on the Sabbath day during the usual hours of service at a greater rate of speed than 10 miles per hour, or cross a dam or causeway where the traveled portion of the roadbed is less than 20 feet wide, at a greater rate of speed than 4 miles per hour. No automobile or motor vehicle propelled by steam, gasoline, electricity or other source of energy shall run upon any highway of this state within a distance of $\frac{1}{2}$ mile of any postoffice of this state at a greater rate of speed than 8 miles per hour, if the local authorities having control of the highway or highways within such distance indicate by an appropriate sign on the side of any highway upon which speed is to be regulated that speed is to be reduced to the rate of 8 miles per hour. Upon such sign there shall appear clearly the words "Slow down to 8 miles," and also an arrow pointing in the direction where the speed is to be reduced, provided, however, that if the territory beyond the said limit of $\frac{1}{2}$ mile of any postoffice is built up to such an extent that in the judgment of the authorities having control of such highway or highways speed should be reduced beyond such half-mile limit of the post office that then, in such case, the authorities having charge of such highway or highways may erect such sign posts at a greater distance than $\frac{1}{2}$ mile of such postoffice and at the limits of such built up portion of the highway, and thereupon no

such automobile shall run within such distance thus established at a rate of speed in excess of 8 miles per hour. Nothing herein contained shall be construed as preventing a board of supervisors from setting aside for a given time a road for speed tests to be conducted under proper restrictions for the public safety.

SECTION 2—Section 166 of said chapter as amended by chapter 531 of the laws of 1901 is hereby amended to read as follows:

SECTION 166—Registration by owners of automobiles.—Every owner of an automobile or motor vehicle shall, within 30 days after the amendment to this section takes effect, file in the office of the secretary of state a statement containing his name and address, with a brief description of the character of such vehicle, including the name of the maker and the number of the motor vehicle, and shall pay to the secretary of state a registration fee of \$1 for each motor vehicle. The secretary of state shall issue to such person a certificate, properly numbered, stating that such owner is registered in accordance with this section, and shall cause the names of such owner, with his address, the number of his certificate and a description of such motor vehicle, to be entered in alphabetical order in a book kept for such purpose. Every person hereafter acquiring an automobile or motor vehicle shall, within 10 days after acquiring the same, register with the secretary of state as required by this section. This section shall not apply to a person manufacturing or dealing in automobiles or motor vehicles, except those for his own private use, and except those hired out. The secretary of state shall number the certificates which he has heretofore issued in the order in which they have been issued, and upon request of the holder of any such certificate, shall, without further fee, stamp thereon the number of the same or issue a duplicate showing such number. Every person desiring to operate an automobile as mechanic, employee, or for hire, shall, within 30 days after the amendment to this section takes effect, file in the office of the secretary of state a statement giving his name and address, and also a description of the character of the machine which he is enabled to operate, and shall pay to the secretary of state a registration fee of \$1. The secretary of state shall issue to such person an operator's certificate, properly numbered, stating that such person is registered in accordance with this section, and shall cause the name of such person, with the number of his certificate, to be entered in alphabetical order in a book kept for such purpose. Every person acquiring such a certificate shall, at all times, when operating an automobile, carry such certificate with him.

SECTION 3—Section 169 of said chapter as amended by chapter 531 of the laws of 1901 is hereby amended to read as follows:

SECTION 169—Stop automobile on signal.—Every person driving an automobile or motor vehicle shall at request or signal by putting up the hand, from a person driving or riding a restive horse or horses, or driving domestic animals, cause the automobile to immediately stop and to remain stationary, and upon request shall cause the engine of such automobile to cease running so long as may be necessary to allow said horses or domestic animals to pass. This provision shall apply to automobiles going either in the same or in an opposite direction.

SECTION 4—Section 169a of said chapter as amended by chapter 531 of the laws of 1901 is hereby amended to read as follows:

SECTION 169a—Licenses or permits for automobiles.—Any person owning or operating an automobile or motor vehicle, whether the motive power of the same be electricity, steam, gasoline or other source of energy, except such as are used for public hacks, trucks or other vehicles for hire, shall not be required to obtain any license or permit pursuant to the provisions of any local or municipal resolution or ordinance, or the rules or regulations of any commissioners, trustees, supervisors or other authorities having charge or control of any highway, public street, parkway, driveway or place, or pursuant to the provisions of any municipal charter or any other statute, except as herein contained. Every such automobile or motor vehicle shall have the number of the certificate issued under section 166 by the secretary of state, placed upon the back thereof in a conspicuous place so as to be plainly visible, the numbers to be Arabic numerals black on white ground, each not less than 3 inches in height and each

THE AUTOMOBILIST OF THE EMPIRE STATE

Must register with the secretary of state at the cost of \$1.

Must carry the license certificate with him whenever driving his car.

Must display the certificate number in Arabic numerals not less than 3 inches high on the back of his car.

Must not drive faster than 8 miles an hour in the crowded districts of large cities.

Must not drive faster than 15 miles an hour in the residence districts of large cities.

Must not drive faster than 8 miles an hour in the built-up districts of towns and villages.

Must not drive faster than 20 miles an hour outside of such districts.

Must not pass school houses during school hours nor churches during the customary hours of service at a speed greater than 10 miles an hour.

Must not pass horse drawn rigs, domestic animals or foot passengers at a greater speed than 8 miles an hour.

Must not drive faster than 8 miles an hour within a $\frac{1}{2}$ -mile or greater limit from any postoffice.

Must stop the car or the car and also the engine when signaled to do so by the driver of horses or domestic animals, allowing them to pass before starting again.

For the violation of any of the provisions he must, on the first offense, pay a fine not to exceed \$50 and must suffer suspension from the use of his car for 2 weeks.

Upon the second offense he must pay a fine of from \$50 to \$100 or suffer an imprisonment of 30 days, or both, and must suffer suspension from the use of his car for 1 month.

Upon the third offense he must suffer imprisonment of 30 days and a fine of from \$100 to \$250 and must suffer a revocation of his right to drive an automobile upon the highways.

stroke to be of a width not less than $\frac{1}{2}$ an inch. A person who shall operate or run any automobile or motor vehicle upon any highway, public street, park, parkway, driveway or place, without a certificate first had and obtained as herein provided, or being the holder of such a certificate shall refuse to exhibit the same on demand to any peace officer, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punishable as provided in section 169b, and any person who shall violate any of the provisions of this statute or of any speed ordinance adopted pursuant hereto, upon conviction thereof shall, in addition to the penalties provided in section 169b, be further punished for a first offence by a suspension of his right to run an automobile for a period of not less

than 2 weeks, for a second offense by a suspension of his said right for a period of 1 month, and for a third offence by a revocation of his said right. A person convicted four times of violating a speed ordinance or ordinances shall thereafter be disqualified and barred from receiving a license certificate.

SECTION 5—Section 169b of said chapter as amended by chapter 531 of the laws of 1901 is hereby amended to read as follows:

SECTION 169b—Penalties.—The violation of any of the provisions of section 163 or sections 166 to 169a, both inclusive, or for violating any ordinance, rule or regulation adopted by the authorities of any municipality, or the commissioners, trustees or other authorities of any parkway or

driveway, relating to automobiles or motor vehicles, propelled by electricity, steam, gasoline or other source of energy shall be deemed a misdemeanor punishable by a fine not exceeding \$50 for the first offence, and punishable by a fine not less than \$50 nor exceeding \$100 or imprisonment not exceeding 30 days or both for a second offence, and punishable by imprisonment not exceeding 30 days and by a fine not less than \$100 nor exceeding \$250 for a third or subsequent offence.

SECTION 6—All acts or parts of acts regulating the speed of motor vehicles, inconsistent here-with, are hereby repealed.

SECTION 7—This act shall take effect immediately.

PLANS FOR DECORATION DAY EVENTS

New York, May 18—Automobilists have embraced the idea of a race meet on Decoration day with enthusiasm. Empire City track at Yonkers will accordingly be that day the mecca of metropolitan automobiledom. The Automobile Club of America is out with a call for a run to the Falls. The house privileges of the Empire City Trotting Club have been extended to the participants in the run, who will take luncheon at the club house before calling of the first race at 2 o'clock.

Secretary Reeves seems well satisfied with the number and class of entries already received. With a showman's acumen he prefers to make announcement of them in a formidable bunch, when the entries have closed, rather than issue his information on this point in driplets.

Barney Oldfield is to arrive at the track early next week. His opponent, C. G. Wriggway, will also begin training on the track at the same time. Their practice times at various distances will doubtless serve well to work up enthusiasm for the races Memorial day.

Albert C. Bostwick, a pioneer at track

racing in this country, will make an attempt at this meet to lower Alexander Win-ton's record of 1:02 $\frac{1}{2}$ for the mile. He will drive an 18-horsepower Mercedes. The young millionaire has been absent from the track since October 10, 1901, when he scored 1:13 2-5 for the mile on the Yonkers course.

TWO MEETS AT INDIANAPOLIS

Cecil E. Gibson, manager of the Decoration day motor cycle races at Indianapolis, an-

nounces four events, gold medals being awarded for first and second place in each. The events are, respectively, a 3-mile handicap, a 1-mile handicap, a 5-mile handicap and a 1-mile handicap for winners of first and second place in the other events. Entries will close May 28.

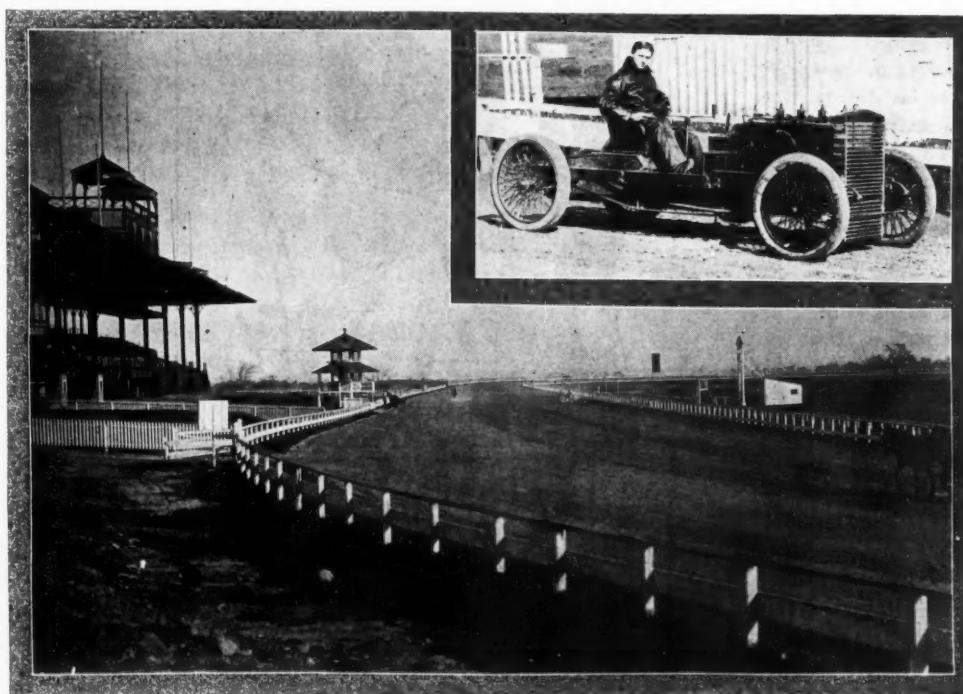
The program for the automobile races under the management of Carl Fisher includes 5-mile races for light machines, for 2,000-pound class cars open for all drivers, for the same

class for owners, for motor cycles, a handicap, and a 1:30 class race. There will also be a 5-mile race match between Tom Cooper and Earl Ki-restrictive bonds.

TO RACE UP HILL

There is to be a hill climbing contest promoted by the New York Motor Cycle Club on Decoration Day on Riverdale Hill, which is on Riverdale avenue a third of a mile from the Kingsbridge station of the New York Central Railroad.

It is $\frac{1}{2}$ -mile long, with a grade ranging from 5 to 12 per cent —8 per cent at the start, 12 in the center and 5 near the top.



Home Stretch—Empire City Track

MOTOR AGE

Barney Oldfield

MOTOR AGE

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THE BAILEY BILL

Governor Odell having signed the Bailey bill, New York state is now blessed—or cursed—with a set of automobile regulations of which divers horseowners are proud, which have aroused every automobile organization in the state to action, and which, if strictly enforced will result in all manner of legal wrangles, take much of the pleasure out from automobiling and cause trepidation in the ranks of prospective purchasers of motor cars.

The bill is presented in full and in summarized form elsewhere in this issue of MOTOR AGE. It is not necessary to dwell here upon its provisions. Suffice it that most of them are unwarranted, unreasonable and injurious to the pastime, the sport and the trade; that the bill is loosely constructed and destined to cause a multitude of arguments concerning the exact intention and the actual legality of its numerous items, and that it places automobiling under restrictive bonds.

It is supposed to be a compromise between horse, pedestrian and automobile interests. It contains a clause which permits the setting aside of a road for a special road contest or race of automobiles. This clause is held up to the automobilists as a generous concession for their benefit. It permits the occasional running of a race. In the meantime and between times the other restrictions are busy spoiling the pastime and sport of ordinary automobiling.

It allows a set contest for a few automobiles but prohibits the rest of the automobilists of the state from using the highways at all except as criminals under careful surveillance and liable to imprisonment, heavy fines, revocation of license, etc., etc., for daring to pass cows driven to graze without stopping both car and motor to allow said cows to pass in peace upon their tranquil cud-chewing way.

It is the queerest compromise in the history of automobile legislation in this country. It is no compromise. It is the most generally restrictive measure yet framed to govern automobiling, provided that its various provisions

are interpreted literally and rigidly enforced. For by its provisions local authorities can, if they wish, render automobiling almost impossible, while drivers of horses, sheep and cows may have all the fun they desire with automobilists, retaliation or even disregard for their joking being barred by the threat of imprisonment.

It is now up to the automobilists to take the bill into court by expensive test cases. Meanwhile automobiling in the Empire state is "up in the air." Trade is affected by the possibility that automobiling may not be worth while and a long line of trouble awaits those who shoulder the task of determining the validity of the law.

THE NEW RACING RULES

In matters purely domestic there may be a great deal of work to be done by the American Automobile Association of far greater value to the fraternity than the promulgation of racing rules. There is no feature of the association's work, however, so popular with the masses as racing. The promulgation of suitable racing rules is the one undertaking in which the eyes of associations of other countries are upon us.

The rules which governed the sport last year—or, perhaps it would be more correct to say were intended to govern it but did not—were patterned after those of an association

which rules another, and totally dissimilar sport. They were cumbersome, incomplete and quite inadequate. In consequence of this promoters made rules for themselves and the racing board allowed infractions to pass unnoticed.

The rules have now been completely remodeled. Even now they may not be perfect but that they are a great improvement has been asserted already by people who have studied them since their publication in MOTOR AGE last week.

Stewards, nominators and owners have been discarded as unnecessary and cumbersome adjuncts. Instead, we shall have, hereafter, just plain contestants or operators, titles which leave no doubt as to the functions of the people to which they are applied. The racing board has decided to call a spade a spade, a judge a judge and a referee a referee. It has used plain English all the way through and left no doubt as to its meaning. It has become contrary to the rules to burden the programme with ornamental officials or to permit the presence on the track or in the stands of any except those who have business there.

The rules start with a provision for an application for a sanction which must set forth such details as will prevent a change of the number or value of prizes, the distance of a race or any other feature in which the entrant is vitally interested. The latter, on his part,

will be required, at the time of entry, to describe the machine he intends to use and no substitution of man or machine will be permitted. This feature of the new rules does away with a question frequently asked last year, whether the man or the machine constituted the entry.

The old rules made no provision for a referee. Instead there was a cumbersome board of stewards. No one attempted to follow the method prescribed and the name of a referee was found on every programme. The referee becomes, as he should, the dictator, with the racing rules for a guide. If any question has to be decided the referee is the man to render the decision. Protests of every kind and character are to be made to him within 24 hours. It is within his province to instruct the other officers in the rules, in case they need instruction.

The duties of other officers are clearly defined and there may be no more than the number actually needed to perform the work. The board does not intend to allow the actual workers, who are held responsible for the correct and successful conduct of a meeting, to be hampered by persons appointed because of their social position or "pull."

Umpires, previously forgotten, are to be appointed and it will be their duty to take such positions as may be assigned them by the referee, to watch the racing and report on any and all incidents which may be in dispute.

The starters were required, under the old rules, to draw for positions. Of course they never did so. If they had many a good day's sport would have been drawn out to such an extent as to have been ruined. The new rules provide that the entries shall be numbered by the promoter in the order of their receipt and that the lowest number shall take the pole. This wise provision pre-



vents delay at the start and should have the effect of securing early entries, a consummation much desired by every promoter.

The contestant may please himself as to carrying a passenger. The board takes the ground that the intention of a race is to enable the contestant to make as fast time as possible and that he should be permitted such assistance as will enable him to get the best results out of his machine.

The rule which formerly gave the leader the right to take any part of the track has been wisely changed. The new one requires the leader to keep the pole as nearly as may be

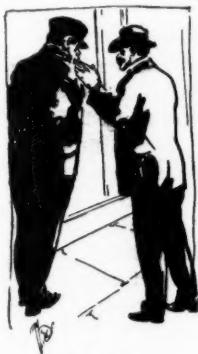
possible and compels others who desire to pass him to do so on the outside unless there shall be an abundance of room on the inside. No competitor, having passed another, may cross in front of him unless at least a clear length ahead, another point not properly covered by the old rules which will appeal to everyone as eminently proper.

Record performances must be certified by at least three timers and, in case of private trials, the timers must have been approved by the racing board in advance. The new rules avoid one uncertainty over a point raised at Detroit last season. The question was raised

whether, in the event of an attempt at a record at a certain distance having proved a failure, any intermediate records made in the same trial could stand. The board decided, without a dissenting vote, that they are valid.

The first meeting under the new rules will be held at New York on Decoration day under the management of people who recognize the necessity of a stringent adherence to their provisions. It will in all probability be a model meeting which will demonstrate the wisdom of many of the new provisions; at least the meet cannot go far wrong if the new rules are followed literally.

CHICAGO FORGOT IT HAD A SPEED LIMIT FOR HORSES



"See!"

The wind was soughing softly through the corridors of the city hall of Chicago late the other afternoon when a representative of MOTOR AGE pushed open the swinging door and approached a janitor who was busy resting before beginning his labors for the day.

"I am looking for information," began the MOTOR AGE man, nervously pulling at the top button of his coat, "and I thought perhaps you might be able to direct me where to go."

"Whach yer want" said the janitor, suppressing a yawn and rising disinterestedly from the depths of his arm chair.

"I want to know the legal rate of speed for horses in Chicago."

"Speed for horses! Wot t'ell you want to know that for? I kin tell you where to find how fast an automobile is allowed to run. The limit on them cussed things is 8 miles an hour. May be Ellicott kin tell you about horses. He's posted on automobiles all right, and perhaps he will give ye the pointer you're lookin' for. When I wus a-comin' down Jackson boulevard this mornin' I saw one of them fellers wot was drivin' a big red thunder car, and he wuz goin' faster nor the law allows. Ef one of 'em ever runs over me, I'll show him wot the speed limit is. Them automobilists think they can run over everybody just becuz they've got a license, but I won't stand for it. See?" The janitor sank back exhausted from the unusual exertion caused by talking so much, and was soon again wrapped in slumber.

Entering the office of the city electrician, the seeker for information learned from the clerk that Mr. Ellicott was absent for the day.

"Perhaps you can assist me," he said, smiling as benignly as he knew how at the clerk. "I want to know the speed limit in Chicago for horses."

"Speed limit for horses!" echoed the clerk, with a surprised look on his chiseled brow. A few visitors in the office looked curiously at the inquirer, thinking he was not just right in his head, and then they quietly slipped out at the door. The clerk hesitated a moment, looked thoughtfully out of the window, and then said:



The Visitors Left

"Why, really, don't you know, I don't know. I don't believe there is any speed limit for horses. I can tell you how fast an automobile is allowed to go, though," he added, brightly. "Them's the fellows to watch for speed."

"But I want to know how fast to drive a horse and not run the risk of getting arrested," persisted the stranger, shoving his hat back and wiping the perspiration from his brow.

"Well, you might find out in the police department, but it's doubtful. The rate for automobiles is 8—"

The door closed on the retreating form of the MOTOR AGE man and the rest of the sentence was lost.

The first clerk approached in the police department was busy writing out a report with a pen, ably assisted by contortions with his tongue, and the work so absorbed him that a hesitating cough was not noticed. A scraping of feet on the floor and the accidental kicking of a chair at last aroused him.

"I want to know the legal rate of speed for horses in Chicago."

"Don't know nothin' about it. Go across the hall and ask. They might know in there," was the brusque reply. "If you want to know the rate for automobiles, it's—"

But the stranger was gone.

The man behind the desk "across the hall" looked askance when he heard the question, and then said:

"Why, the rate for horses is 8 miles an hour. Of course it is. That is, I think so. I'm not sure about it, but I suppose that's as fast as they go. I don't know whether there is any law on the subject or not. The rate for auto—"

The inquirer was in the rear of the room asking the same question of a tired-looking young man who was surrounded with law books and who seemed vested with authority. He, too, looked surprised at the question, and waited for it to be repeated before answering.

"The ordinance says 8 miles an hour, I



—and see"

guess. Here's the ordinance book." He turned over a few pages and showed that the book really contained ordinances, but failed to get the one pertaining to the question asked. The book itself he considered sufficient evidence.

"Are you sure it is 8 miles an hour?" insisted the MOTOR AGE man. "I want to know positively."

The clerk paused in his conversation with a bystander who was discussing the judicial contest, and sighing wearily, said:

"Oh, well, if you have to know, we can find it for you. Here it is, section 1259. Why, it's only 6 miles an hour!" he exclaimed with surprise. "I thought it was 8. The rate for automobiles is 8 miles and I thought—"

The book had been taken from his hands and the stranger was eagerly looking at the section indicated. The page was entirely free from finger marks, showing that the police force had not been busy looking up the speed limit for horses. There in words that stood out boldly from the printed page was the information so long sought for, which, stripped of its legal verbiage, said that it is a misdemeanor to drive a horse or other animal on the streets of Chicago at a speed exceeding 6 miles an hour, or 4 miles an hour in turning corners, the penalty being a fine of not less than \$10.

After reading and re-reading the words which would put at least one-half of the population of the city in prison cells, if enforced as is the similar ordinance referring to all automobiles, the inquirer dropped a tear on the unsullied page and slowly closing the book laid it back on the desk. Lifting his hat with courtly grace to the young man who had so kindly and considerately given up the desired information, the MOTOR AGE representative bowed his thanks as he backed toward the door, when the first man he had questioned as he entered the room tapped him on the shoulder and said:

"If you want to know the speed limit for automobiles—"

There is a cracked glass in the door of the office of the police department, caused by the hard slam given it as the seeker for information fled.



A Cracked Glass

CAMPAIGN FOR COUNTRY MACADAM

Pittsburg Club Proposes to Have More Gentle Grades and Much Better Road Surfaces—It Will Conduct Hill Contest

Pittsburg, Pa., May 18—The Pittsburg Automobile Club is preparing to wage an active campaign this summer in behalf of better country roads. A committee has been appointed to act in conjunction with the county commissioners with view to making better grades and toward having done a large amount of macadamizing on the principal roads leading through the county. Owing to the heavy rains in the spring many of the most popular drives have been impassable for automobiles until within a few days.

To further the interests of the club and make its members thoroughly familiar with all the best roads within a radius of 50 miles of Pittsburg the committee is preparing a map which will be given to every member. This will not only enable the members to lay out trips to better advantage but will also be a strong argument to present to the commissioners in advocating the needed road improvements.

HILL CLIMB IN JUNE

Instead of Decoration day races, the Pittsburg club will hold a hill climbing contest early in June. President George H. Flinn has appointed a committee who will fix a time and place for the contest. Two cups are offered for the successful contestants, one by W. C. Temple and the other by Reuben Miller, Jr. The run up hill is expected to draw a larger crowd than the customary race and a large number of the local automobilists have already entered.

The club has adopted for its emblem a wheel shaped badge. The general idea is that of an artillery automobile wheel with a wreath. The hubs are to be of gold, the spokes of red enamel, the wreath of green, the circle of platinum and the letters in black. Around the rim of the wheel are to be inscribed the words Pittsburg Automobile Club.

AFTER THE LAW MAKERS

A committee whose duty will be to try to secure changes in the state speed law has been appointed by the club. The committee will act in conjunction with a similar committee from the Philadelphia Automobile Club. The law now limits the rate of speed to 8 miles an hour within the limits of a corporate city. Outside the city limits the rate is fixed at 20 miles an hour provided that upon the approach of a team the speed shall be reduced to 10 miles an hour. The speed limit in the city is not satisfactory under the present arbitrary reading of the law, and the club, which is anxious to have city and state legislation that will be both a safeguard to the citizens and satisfying to automobilists, will advocate a change.

SPAIN GENEROUS IN PRIZES

The delegates from the Spanish Royal Automobile Club have sent to the sports committee of the Automobile Club of France a list of the prizes that will be given in Spain for winners in the Paris-Madrid race.

King Alfonso XIII. will present a prize known as the Prix de Sa Majeste le Roi, for the first machine after classification, of whatever category.

The Principe and Princesa de Asturias will

give a prize for the first machine to cross the Spanish frontier before classification.

The Infanta Isabella will give a prize for the second machine after classification arriving at Madrid.

The Minister of agriculture will give a prize for the first machine, driven by alcohol, to arrive at Madrid after classification.

The Prix de la Municipalité will be given for the first machine to arrive at Madrid, irrespective of classification.

The Royal Automobile Club will give a prize for the first machine of the first category after classification.

The Prix des Dames de la Société de Madrid will be given for the first machine of the second category after classification.

The Prix du Cercle La Gran Peña will be given for the first machine of the third category after classification.

The Prix du Casino de Madrid will be given for the first team after classification.

The Prix du Nuevo Club will be given for the first machine of the fourth category after classification.

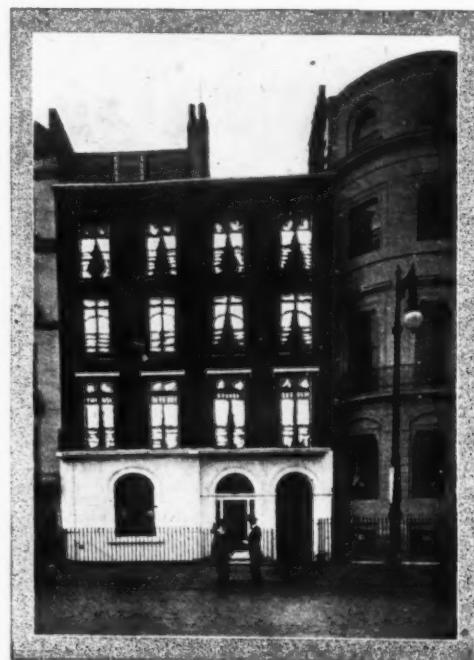
GETTING READY FOR BUSINESS

The Ladies' Automobile Club of Great Britain and Ireland Plans Numerous Lines of Useful Endeavor

The newly organized Ladies' Automobile Club of Great Britain and Ireland will be officered by two Americans—the Duchess of Marlborough and Mrs. Adair, and two British ladies—making a sort of Anglo-American alliance in motordom.

The first meeting of the club was held May 18 at the new premises, 110 Piccadilly, which is only a few doors from the men's club. It is the intention of the ladies' club to take an active part in the car-lending league, to give rides to the convalescing sick of the hospitals, and it is also probable that a fund will be started for the benefit of the families of professional motor drivers who fall sick or meet with accidents incapacitating them for work.

The ladies' club will enjoy all the advantages of the men's club, besides having headquarters of its own where repairs will be attended to and arrangements made for the control of driving competitions and other motor events prepared for femininity.



MOTOR AGE Home of the Ladies' Automobile Club

DINNER FOR GORDON BENNETT TEAM

Cleveland Club Will Give Messrs. Winton, Mooers and Owen Hearty Farewell Before They Leave for Ireland to Race

Cleveland, O., May 19—The Cleveland Automobile Club is showing decided signs of life. On May 26 the club will give a banquet at the Hollenden hotel in honor of the departure for foreign shores of the American racing team that will take part in the Gordon Bennett cup race. With all the members of the team listed on the rolls of the club membership, the organization proposes to give the team a good send-off. A number of prominent out-of-town enthusiasts will be present and an interesting program is promised.

EXTENSIVE CLUB RUN

Next Saturday and Sunday will be held the first country club run of the season. The committee on club runs has arranged an interesting itinerary for the first outing. As it is expected there will be a large number of participants, the start will be a "go-as-you-please" affair. The members are asked to proceed as best suits their convenience to "Old Maids Kitchen," a popular resort near Cuyahoga Falls, where dinner will be served. From there a formal start will be made and the run will be to Akron and Barberton, putting up for the night at Barberton Inn. The next day the motorists will go to Lodi and then to Medina, where dinner will be obtained, after which the party will return to Cleveland over the old state road. The total distance is 110 miles.

TROUBLE OVER NUMBERS

Owners of Oldsmobiles and machines of similar pattern using the detachable rear seat are having trouble with members of the police force. The Cleveland automobile ordinance provides that license numbers be placed on the rear of the machine and not on the rear axle. Of course, with the dos-a-dos seat in position it is impossible to place the numbers on the body, and the owners of these vehicles have endeavored to obey the law by placing the placard on the rear axle. The operators contend that this is the only manner in which they can carry the numbers on the rear of the machine and still have them in sight, as required by the ordinance, while the watchful guardians of the law maintain that the regulation specifically requires that the numbers must not be placed on the axle. The arguments have grown so spirited that the club has asked the law director to look into it.

SCARRITT ASSUMES A NEW ROLE

East Orange, N. J., is to be the scene on Decoration day of an automobile trip "around the world." Winthrop E. Scarritt is the prime mover of the novel function, but modestly denies that it originated with him. Well known automobilists and society women have entered into the suggestion with enthusiasm and will put themselves and their machines that day at the service of what Mr. Scarritt calls "The Globe and East Orange Transportation Co." The object is charity and the clever idea is likely to be copied in other cities and become quite a fad.

This is the scheme: Houses in various parts of the Oranges are designated as cities of the world to be visited by the tourists. Berlin, Paris, Tokio and London are the cities chosen on this occasion. At each, those in charge will be appropriately costumed and the surround-

ings will be made to conform as closely as possible to the cities depicted. Pretty girls in native costume will serve refreshments, sell souvenirs and carry out other forms of highway robbery for secret charity's sake.

Fifty automobiles will constitute the train services. They will start from a central station and bear the tourists from city to city. A coupon round trip ticket will be sold. When the visit to one city is completed an automobile will be taken to the next city. Those using their own automobiles will pay fare just the same.

A "Baedeker" is to be issued and distributed by thousands as a preliminary advertisement. The coupon tickets were gotten out by the Lackawanna Railroad ticket department. It is expected that several thousand tourists will make the trip around the world. As a good scheme for charity fund raising and for making the automobile popular it will be hard to beat and will bear imitation.

NEW YORK HORSE MEN FEARLESS

Have No Reason to Observe Speed Limits—Race Track Coach Driven Regularly at 12 Miles an Hour

New York, May 16—The article in the last issue of *MOTOR AGE* showing the continued violation of the speed laws by the drivers of horse drawn vehicles, attracted considerable attention in this city. Owing to the agitation against automobiles the police have been exceedingly active during the past 3 weeks, but no one has heard of a horse driver being arrested for speeding, notwithstanding the fact that over 90 per cent of the vehicles are constantly exceeding the legal limit.

A *MOTOR AGE* representative, while in the rooms of the Automobile Club of America recently, was called to the window by one of the members. The coach Reliance, which makes daily trips between Sherry's and the Morris Park race track, was coming down the avenue. A policeman rushed into the roadway, waved the other vehicles aside and the coach swept down the street at a speed of about 12 miles an hour.

"What do you think of that?" asked the A. C. A. member. "We'd be arrested if we passed here at three-quarters that speed." The *MOTOR AGE* man subsequently saw the driver of the coach.

"What is your running time between Sherry's and the track?" he asked.

"One hour and fifteen minutes, and we're on time every day," was the proud reply.

"What is the distance?"

"About 14 miles."

The legal rate of speed for horse drawn vehicles in New York is 6 miles per hour.

RAPID HILL CLIMBING

One of the principal events of the automobile season of Austria was run this month at Exelberg, near Vienna. It was a hill climbing contest, the distance being a little less than 2½ miles and the grade averaging 9 per cent. G. Oppel on a Paris-Vienna 24-horsepower Darracq and Hieronymus on a 24-horsepower Spitz, made the best time in the light vehicle class, covering the distance in 5:32 4-5. Count Wimpfen, on a 10-horsepower Serpollet, won the heavy vehicle class contest in 5:55 2-5; Schwertlenka, on an 8-horsepower de Dion-Bouton, was first among the voitures, in 9:30 4-5, while Toman, on a Laurin-Clement bicycle, won in his class in 5:33 4-5.

MUCH WORK FOR ST. LOUIS CLUB

To Build Club House, Improve Roads and Determine Validity of New Missouri Automobile Law—Members Enthusiastic

St. Louis, May 19—The Automobile Club of St. Louis is entering on the second year of its existence, and much enthusiasm and interest is being shown by the members in the affairs of the club. The new board of officers has just been elected, the presidency going to John S. Carter, who succeeds G. W. Walker. E. H. Steadman is secretary and Clarkson Potter treasurer. The club now has about seventy members, and is receiving a number of new accessions.

TO IMPROVE ROADS

There is some talk of establishing a club house on the Olive street road about 2 miles west of the North and South road. The club will have numerous runs this year, and an endurance contest is also being planned. The country roads hereabouts are not in very good condition, and the club will make an effort to have them improved. The favorite roads for the members now are the Clayton and Manchester roads, the St. Charles rock road and the Natural Bridge road.

WILL TEST NEW LAW

The members of the club feel that they have something to contend with in the new law that becomes effective in June. By this bill the speed limit is placed at 9 miles an hour anywhere in the state, and the automobiles must stop when meeting ordinary carriages. Licenses must be taken out in each county and license fees paid, and the number of the license painted in 3-inch figures on the machine. According to this law a man touring a dozen counties would have his machine full of figures and his pocketbook empty of money. The first prosecution under this law will likely be made a test case to attack the bill's validity.

There are now about 300 machines in this city, with gasoline cars in the majority, steam ranking next. The one local manufactory has all the business it can handle. There is only one foreign car in the city. The American product is good enough for the people of St. Louis.

MINNEAPOLIS HAS POWER TEST

Its Automobile Club Conducts a Successful Hill Climbing Competition—Is Limited To Club Members

Minneapolis, Minn., May 18—The hill climbing contest given by the Minneapolis Automobile Club last Saturday drew a crowd of 1,500 interested spectators, and demonstrated that the northwest has an active interest in all that pertains to automobiling.

The contest was given on Kenwood hill, and all traffic was stopped while it was in progress. The machines were run up one at a time. No difficulty was experienced by any of the machines in climbing the hill, but some of the smaller cars found it pretty hard pulling up the incline of the second grade. There were no accidents of any kind to mar the day's pleasure, and the members of the club are highly pleased with the success of their first contest.

In Class 1, L. H. Fawkes, with a Rambler, was first in 1:55½; N. E. Brown, Cadillac, second, in 1:56, and A. F. Pillsbury, third, in

2:08. Following these the order was E. J. Phelps, Olds; George P. Chase, Cadillac; H. E. Pence, Cadillac; W. Y. Chute, Rambler; D. E. Andrews, Cadillac; L. B. Newell, Cadillac, and L. Paulle, Olds.

In Class 2, A. W. Strong, with a Knox, was first, in 1:58; E. J. Phelps, Knox, second, in 2:04, and W. E. Wheeler, Knox, third, in 2:04½. Others in this class arrived as follows: J. B. Stewart, St. Louis; Dr. W. A. Jones, Knox; George Doerr, Orient; Willis Walker, Stevens-Duryea, and W. M. Adland, Union.

In Class 3, the only entry was A. T. Rand with an Autocar, his time being 2:21.

In Class 4, H. E. Pence, with a Toledo, was first, in 1:15½; H. P. Watson, second, in 1:31½, and Alfred Pillsbury, Winton, third, in 1:33. Following these were George Christian, Winton; Charles Pillsbury, Winton, and Asa Paine, Winton.

HUB DAILIES ESPOUSE MOTORING

All of the Papers In Boston Establish Exclusive Automobile Columns—Clubmen Give Doctors a Ride

Boston, May 18—All the newspapers in this city seem to have suddenly awakened to the fact that the automobile field offers great inducements to them, and that their readers demand automobile news. The Boston Herald was the first to establish a regular automobile column. This it inaugurated 3 years ago and has since kept pace with the sport, sending a special representative on the endurance contests, to the big shows, and to other events of importance. The Transcript has likewise run an automobile column for about 3 years, but until recently these two papers had the field to themselves. The Boston Globe started an automobile column 2 weeks ago, as did also the Boston Post and the Boston Journal, so that there is not a paper published in this city that does not do more or less in the interest of automobiling. Not a single one of these papers has appeared in the role of an anti-automobilist. Instead, they all seem to vie one with the other in advancing the interests of the sport.

F. H. MacAlman, local agent for the Locomobile, is about to start on an automobile trip through Nova Scotia. He will take one of the company's stock carriages and expects to cover over 2,500 miles in all.

Kenneth A. Skinner was suddenly called to France last week to confer with the home office regarding some of the affairs of the De Dion Bouton Co. He will be back by May 30, however, to ride his match race against Harry Fosdick.

The twelfth annual meeting of the Association of Military Surgeons of the United States will be held in Boston, this week, and the committee of arrangements has planned an automobile run to Lexington. It is proposed that automobile club members take the medical officers to Lexington in their cars. Dr. W. A. Rolfe and Dr. J. C. Stedman of the Massachusetts Automobile Club constitute the committee in charge.

Up to date fifty entries had been received for the Circuit des Ardennes, the big Belgian race. Jarrott, Baron de Caters, Jenatzy, Heath, Baron de Crawhez, Osmont, besides six Mors, three C. G. V., two Wolseley, six de Dietrich, four Darracq and seven Clement cars are already entered.

BRISK AMATEUR RACING ON THE PACIFIC COAST

Los Angeles, Cal., May 15—Out here in the far west we look forward to la Fiesta de Los Angeles with more interest than any other holiday can possibly inspire. The Fourth of July is like the proverbial 30 cents when brought into comparison with our annual Fiesta. This year we had the president as our guest to add to the importance of the occasion.

The automobile races and show was to have been an official feature of la Fiesta, but an

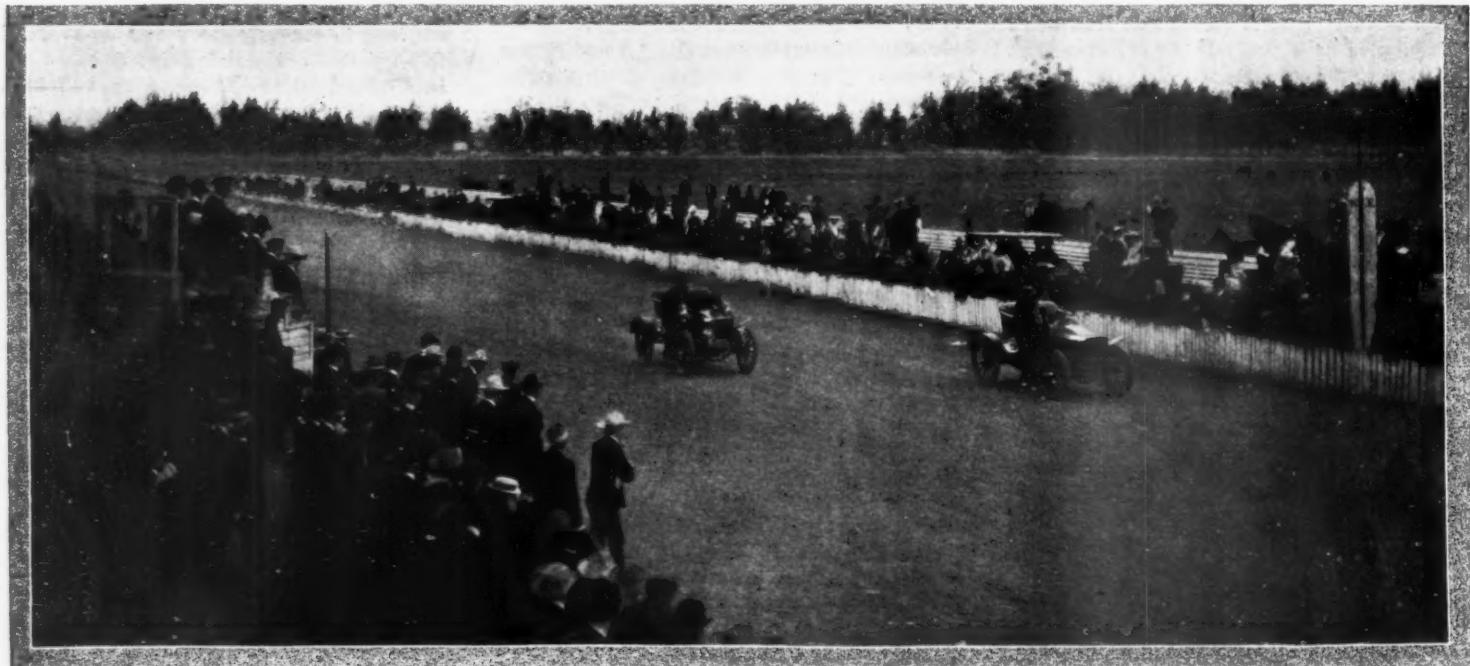
usual a striking and important feature.

Saturday noon the automobile folks gathered at the old plaza and with a brass band in a Mobile wagonette and an electric tallyho, the long line of silent carriages flitted through the downtown streets at such a pace that late comers for positions in the parade were not able to locate it until it was well on the way to the track. If it had not been Fiesta week and just after the thrill of the other parades,

flying car disappeared over the outside fence at the top of the homestretch. Next to that was the remarkable time made by the White steam cars, the new White touring car, manned by a novice, doing miles in 1:22 and the fourth mile of a 5-mile race in 1:18½.

A locally made car also came in for a share of the glory, establishing new coast records.

A racing Darracq was expected and the four cylinder Panhard, owned in Pasadena, was to



MOTOR AGE

One of the Close Finishes



MOTOR AGE

Turner Winning 5-Mile Race for Heavy Gasoline Cars

entrance fee being charged it was not included and the horse owners secured the afternoon the president was scheduled to arrive for a blue ribbon meet and horse show. But President Roosevelt did not attend, as his arrival was delayed till the next day by his reception at Redlands and Riverside. The automobile races were set ahead a day, necessitating the use of Sunday for the second day. In the big parade which was reviewed by the president the floral decorated automobiles were as

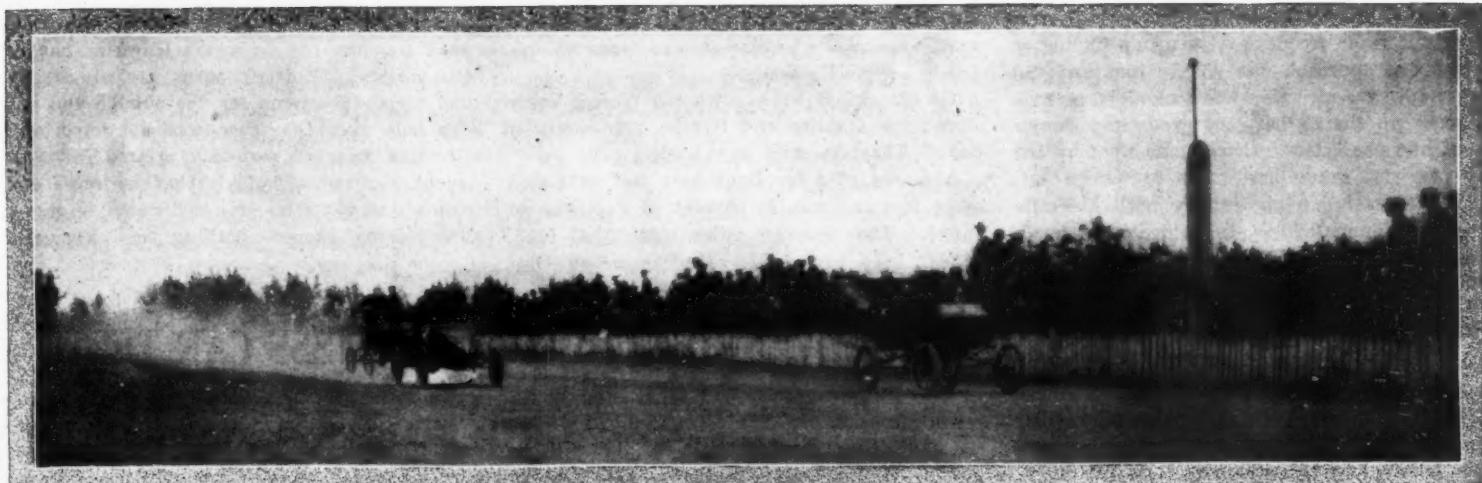
the line of automobiles would have been a nine days' wonder. There was also a parade up and down the home stretch when the track at Agricultural Park was reached.

There are no racing machines here, so all the racing was done with stock cars. Yet creditable time was made. Naturally the sensation of the 2-day tournament was the accident when Hawkins of San Francisco and his

EDITOR'S NOTE—The telegraphed summary of this meet was published in Motor Age last week.

have taken part, also a number of local runabouts, but there was a general contagion of "cold feet" at the last moment and the racing committee of the Los Angeles Cycle Board of Trade, this organization being the promoter, had to depend on less than a score of automobiles for the races. The motor cycle events proved a great attraction and the few bicycle races added still more zest.

The meet opened with an Australian pursuit race for motor bicycles. As there were too



MOTOR AGE

Grothe Winning 2-Mile Steam Race

many entries for one race there were two trial heats. In the first was R. C. Hamlin on a 4-horsepower Orient; R. H. Kranz, on a 4-horsepower Orient; A. Hoxsie, with the very first motor cycle brought here, a Thomas Auto-Bi, and Arthur Burgess, on a 4-horsepower California. Burgess started in this heat at a disadvantage as his machine had been rushed down from San Francisco just as it was left when last used, months ago, and he had no time to get it ready. Hamlin won in $6\frac{1}{4}$ miles, his time being 9:31, with Kranz the last man caught. The second heat went to Fritz Lacy, on a locally made machine fitted with a Thor-Hedstrom motor. In second place was C. W. Risden, local agent for the Indian. The distance was $5\frac{1}{2}$ miles and the time 6:20. In the final Hamlin won from Lacy in a closely contested chase that lasted for 12 miles. The time was 17:12.

The automobile racing began with a hotly contested 2-mile race for steam cars which was won by Walter Grothe, with a White. He reached the tape just ahead of Frank A. Garbutt—White touring car—and Manager Hawkins—White stanhope—of the San Francisco branch of the White company. While the time was not fast according to records in the east, the second mile was track record. The time was 3:12; last miles in 1:30 $\frac{1}{2}$.

The 5-mile race for gasoline cars of 1,500 pounds or over was a contest between two 1903 Peerless cars and a 1902 Winton. The Win-

ton was driven by J. W. Carhart, its owner. It was no match for the two Peerless cars which won by nearly a mile and a half. Harry Turner, accompanied by his brother, drove the winning car. The time was 8:56 $\frac{1}{2}$, an average of about 1:47, or over 10 seconds to the mile



MOTOR AGE

The Crowded Grand Stand

ton was driven by J. W. Carhart, its owner. It was no match for the two Peerless cars which won by nearly a mile and a half. Harry Turner, accompanied by his brother, drove the winning car. The time was 8:56 $\frac{1}{2}$, an average of about 1:47, or over 10 seconds to the mile

slower than the average the light cars made later. This was undoubtedly due to the heavy condition of the track.

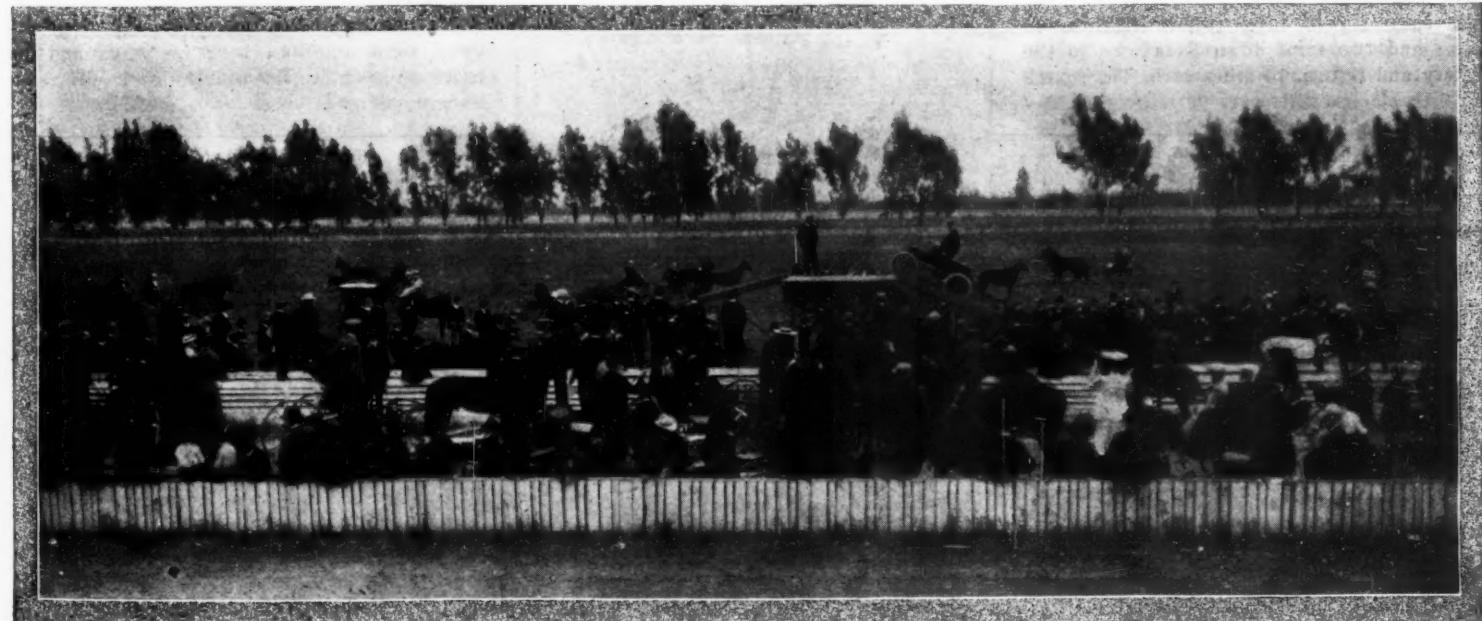
A 3-mile open was divided because the drivers of gasoline runabouts did not care to go against Frank Garbutt in his White touring

car. The steamers, all Whites, gave another close finish preceded by a number of spirited brushes. This time Garbutt proved best and the 3 miles were reeled off in 1:29 $\frac{1}{4}$, 1:29 $\frac{1}{2}$ and 1:30 $\frac{1}{4}$. Hawkins pulled up close for second. The 3-mile race for runabouts, which followed, was between Hansen of Pasadena in a Tourist, the local automobile, and F. E. Hughes in a 1903 Oldsmobile. This was a race every inch of the way. Hughes got the best start and was never passed. It was like watching a paced cycle race on an indoor track when two contestants strive their best but neither can gain. The time by miles was: 1:14 $\frac{1}{2}$, 1:36 $\frac{1}{2}$ and 1:38 $\frac{1}{2}$. The next day the tables were turned and Hansen won from Hughes and the Oldsmobile by a small margin, although it was "nip and tuck" all the way.

The 5-mile open on the first day was the record-breaker when the White touring car was turned loose by Frank Garbutt. After the first mile the gasolines were no longer in it and only Grothe was able to hang on to Garbutt. The order of the finish was Garbutt, Grothe, Hawkins, Turner, Evans, Carhart. The time by miles were 1:33 $\frac{3}{4}$, 1:27 $\frac{1}{2}$, 1:29 $\frac{1}{4}$, 1:18 $\frac{1}{2}$ and 1:22. The official time was 7:15, but the actual time was two seconds better. This is state and coast record for 1, 2, and 5 miles.

The crowd was not as large on Sunday, but the track was faster and the turns easier to hold.

A pleasing feature was the exhibition of



MOTOR AGE

Waverley Climbing 40-Per Cent Grade

grade climbing. H. M. Hanshue in an Oldsmobile and W. K. Cowan with a Waverley electric runabout made frequent trips up an incline of which one approach was 25 per cent and the other 40 per cent. Hanshue took eight persons at once up the 25 per cent grade and Cowan went him one better. Cowan also went up the 40 per cent grade backwards to win a hat.

The races began on Sunday with a 5-mile handicap for motor bicycles, which was won in the creditable time of 6:30 by Fritz Lacy from

scratch, with the Thor motor machine. The time by miles was 1:27, 1:14½, 1:15, 1:16½ and 1:16. Hamlin, who also started from scratch, finished a good second.

Grothe and Hawkins with the Whites locked horns for 5 miles and Grothe won easily in 8:52. The best mile was 1:30½.

A 5-mile race for light cars was contested every foot and won by Hansen of Pasadena in 7:50½. The time by miles was 1:34, 1:35, 1:36½, 1:34 and 1:37. Hughes in an Olds

was a close second, having clung all the way.

The closing automobile race of the 2-day meet was the one in which Hawkins ran off the track. The track turns are almost flat and his sudden jump for the outside and sudden bolt over the fence was not surprising. Hawkins was not seriously injured. The accident occurred so quickly that the other contestants in the race were not aware of it and finished as though nothing had happened. Grothe won easily.

FOURTEEN ENTRANTS AND ELEVEN STARTERS IN BUSINESS CAR TEST

New York, May 20—The first of the eleven starters in the A. C. A. commercial vehicle test got away promptly at 9 a. m. today, and was followed by the others at 3-minute intervals. The completion of the first stage over uptown roads is expected at noon. The entrants not starting were the Motor Truck Co.'s stake wagon, and the Grout and Empire State steam delivery wagons. Notwithstanding the week's extension of the closing entries, but two additional nominations were made, making fourteen in all. There is but one entry for the first class for vehicles carrying 750 pounds and none for the sixth class for 10-ton trucks.

The membership of the National Association of Automobile Manufacturers is but meagerly represented, the executive committee having declared when the test was first postponed that trials at this time were not desirable.

The full list of entries is as follows:

First class—750 pounds dead load—Mobile Co. of America, steam delivery wagon.

Second class—1,500 pounds dead load—International Motor Car Co., electric delivery wagon; Grant Bros., steam delivery wagon; Knox Automobile Co., two gasoline delivery wagons; Empire State Engineering Co., steam delivery wagon; Blaisdell & Co., steam delivery wagon.

Third class—3,500 pounds—Union Motor Truck Co., gasoline stake truck and gasoline baggage express; Motor Truck Co., gasoline stake truck.

Fourth class—6,000 pounds—Morgan Motor Co., steam truck; Arthur Herschmann, steam truck.

Fifth class—10,000 pounds—Coulthard & Co. (John Gardner), steam truck; Arthur Herschmann, steam truck.

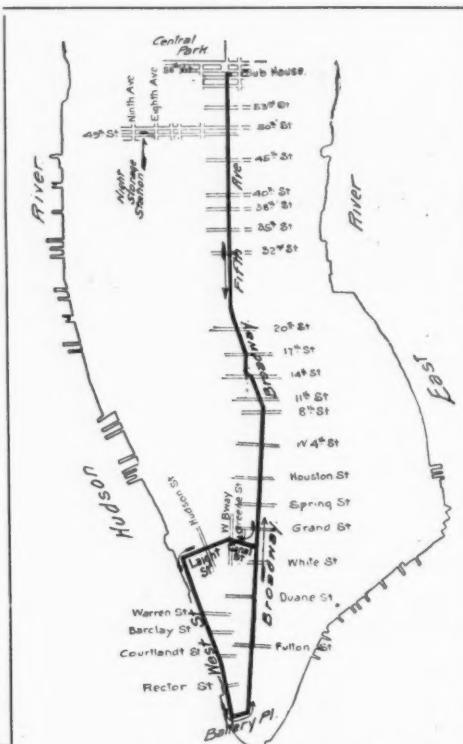
The second and third classes will cover 40 miles each day in three stages—uptown, 20 miles; and two trips down Broadway to the Battery and return, 10 miles each. The fourth and fifth classes will cover 30 miles each day

in two stages—uptown, 20 miles, and downtown, 10 miles.

Gold, silver and bronze medals will be awarded in each class to the vehicles making the first, second and third best performances. The awards will be based on economy in cost of operation and time in covering the route.

THE FIRST DAY'S WORK

New York, May 20—At 4:30 this afternoon nine of the eleven starters had completed the first stage, five the second, and four the third. Two of the contestants had abandoned the contest for the day. The driver of the Herschman heavy steam truck had trouble with the boiler and a hand pump of the Blaisdell steam delivery broke and the car caught fire.



Second Stage of Business Vehicle Test

The order of the finish and elapsed time of the cars covering the first stage, which was 20 miles, uptown, was Knox, 16-horsepower, 1:35; Mobile steam delivery, 2:00; Knox, 8-horsepower, 2:09; International Motor Car Co. delivery, 2:23; Union baggage express, 3:12; Herschman light truck, 3:52; Coulthard, 5:17; Union stake truck, 5:43; Morgan, 6:29.

In the second stage, which was 10 miles downtown, the order of finish and elapsed time was: Knox, 16-horsepower, 1:10; Mobile, 1:09; Knox, 8-horsepower, 1:12; International, 1:23; Union express, 2:40.

In the third stage, 10 miles down town, the order of finish and elapsed time was: Knox, 16-horsepower, 1:00; total time for the entire trip, 3:35; Mobile, 1:14, total 4:23; Knox, 8-horsepower, 1:16, total 4:37; International, 2:20, total 6:15.

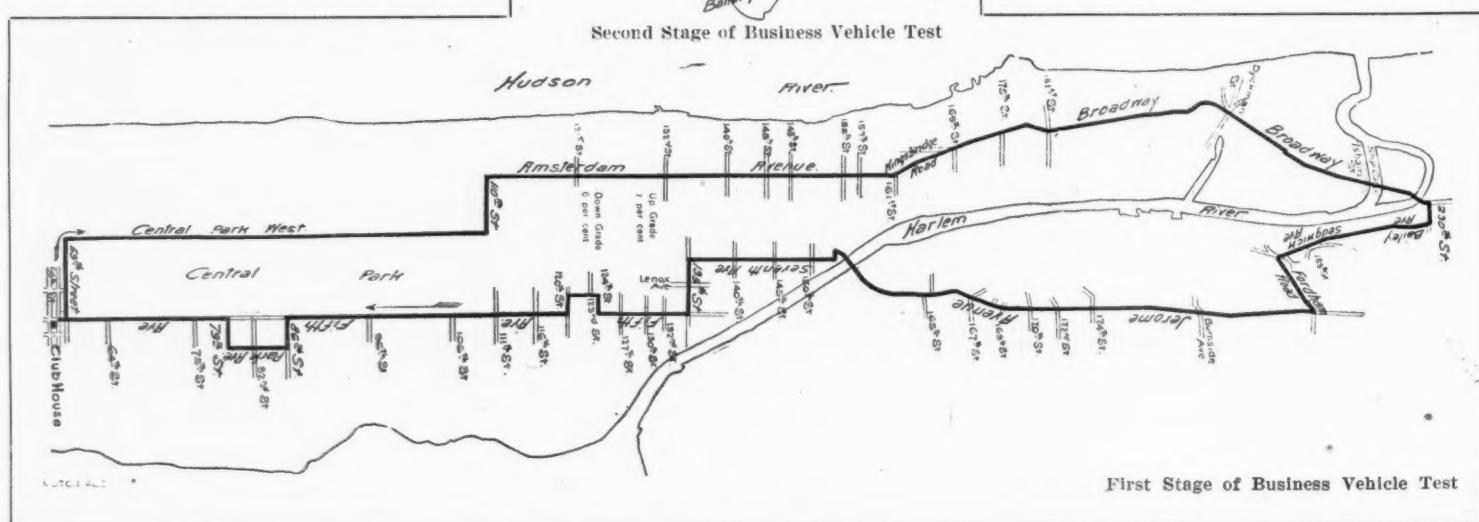
The Coulthard car stuck in the mud for 2 hours, and the Morgan car was delayed by defective pump circulation, but they persevered to the end of the first stage and started on the second.

TRY-OUT OF STEVENS-DURYEAS

Five Stevens-Duryea gasoline automobiles made a trip from Springfield to Chester, Mass., May 10 with a party of fourteen people, the distance traveled being about 33 miles. Some of the cars were of this year's model, out for the first time, and they made the trip without trouble of any kind. Steep hills and sandy roads were encountered but the cars went along nicely.

INTO ACTION WITHOUT LOSS OF TIME

New York, May 18—Nassau county, the progenitor of the Bailey law, will be the first to enforce its provisions. The board of supervisors today passed ordinances limiting the speed to 8 miles an hour in towns and 20 miles an hour in the country and will erect warning signs at once.



MORE OPINIONS OF MANUFACTURERS ON AUTOMOBILE RACING

At first thought it seems that very little good can be done the general automobile industry, outside of advertising, by the racing automobile. The racing machine, pure and simple, is necessarily of an entirely different construction than the commercial machine, and it would seem that there is actually very little connection between them. Upon studying the matter more carefully, we find that in the racing machine we do away with all the parts possible, even in some cases going to the extent of disposing of the compensating gear, reverse, change speed gears, etc. While it seems impossible to do anything like this in a commercial machine, we are certainly led towards simplicity, and taught that there are many parts usually considered necessary that can be done away with without great inconvenience. Much actual good, we believe, is derived in this manner from building the racing machine.

The writer brings to mind times in his own experience when he has been racking his brain for appliances to do certain things, when upon carefully viewing the matter from all points, he would suddenly discover that the whole thing could be done away with, leaving the finished product much simpler, and practically as good. Personally, the writer believes in the racing machine as an educator as well as a means of furnishing a sport, which to his mind is outclassed by none.—A. R. WELCH, Chelsea Mfg. Co., Ltd.

SPEED VERSUS RELIABILITY

There is absolutely no question in our mind that such prominent contests as the Gordon Bennett and Paris-Madrid events have an influence for good on the automobile industry, both from a commercial and sporting standpoint. No better illustration of this could be asked than the present state of the industry where these contests originated and are held. While the operation of an automobile at excessive speeds over long distances is not calculated to produce a vehicle fitted for general use, it certainly accomplishes such development in every detail tending to secure perfect reliability. The fearful strains to which every portion of the car's mechanism are subjected enables the manufacturer, by a process of elimination, to arrive at such materials as are best adapted for this severe work and thus pave the way for the successful pleasure car.

If the same conditions which exist in Europe and which have made possible the great speed contests, were found in America, we should have in all probability fought out our battles in the same way. The requirements here call for an entirely different construction than on the other side and instead of striving for the perfect car through the school of high speed, we have been obliged to work out our salvation in reliability and endurance contests. The ultimate result sought by both methods is the same. We are all working toward the production of a car which in the hands of the average purchaser will meet his ordinary requirements and be practically fool proof. We are inclined to believe that of the two paths ours is the shorter one.

We have always before us the thing we are trying to improve. Our contests are thoroughly practical and compare favorably with the ordinary conditions of usage. We are firmly convinced that on this account more rapid and valuable advances have been made in the industry here than abroad. Exception will in

all probability be taken to this statement, principally for the reason that in Europe relative merit is determined wholly upon the standard of speed.

We have not had the opportunity, or if the truth be told, the wish, to secure abnormal development along this line, but we think we have established without a doubt a record for absolute reliability under the most difficult conditions of travel that is unequaled by any European manufacturer.—PACKARD MOTOR CAR CO.

TRACK RACES CREATE INTEREST

I look upon track racing as a matter of advertising entirely, and, under present conditions, consider it of great interest to the public as a means of booming the industry. I feel, however, that great care should be exercised to prevent serious accidents happening in connection therewith, and believe that all cars which compete in fast races should be very closely scrutinized in reference to proper means of effectively controlling them.—W. T. WHITE, White Sewing Machine Co.

INJURE WHOLE TRADE

Regarding the value of automobile races to the automobile industry, we do not make automobiles for racing purposes, but our belief is that just at this time, when there are so many laws being passed against the speeding of automobiles, racing is an injury to the trade in general; as the automobile industry has such a firm footing that there is no need of special advertising, and racing can be classed under that head.—ELMORE MFG. CO.

GREAT ADVERTISER

Racing doubtless has had, and probably still has, value to the manufacturers. The great races abroad brought to the attention of the world first, the reliability of the automobile, and then, each season, its marvelously increasing speed possibilities, matters which were necessary in the rapid education of the people and in convincing them that the automobile had become a commercial success. Perhaps by no other means would it have been possible to secure such widespread publicity in so short a time. Whether the successful cars of today really need racing to keep them before the public may be open to question. Certainly no harm can come, however, of a willingness to take part in and thus lend encouragement to good sport. But the greater benefits accrue, perhaps, to the maker of a new machine, seeking an introduction to the public, or to the maker who, while known to manufacture a reliable, high-grade car, has never given any actual demonstration of its speed possibilities.

There can be no objection to races conducted under proper auspices and at proper times and places. On the other hand the scorcher who utilizes the public thoroughfares and disregards the rights of even the humblest citizen is a menace to automobilism and should not be tolerated by the authorities or by the associations whose aim it is to preserve the rights of automobilists.—M. J. BUDLONG, Electric Vehicle Co.

CARE IN ROAD RACING

It is the writer's opinion that automobile racing properly conducted as a clean amateur sport is of benefit to the industry. However, great care should be exercised in road racing, as it would undoubtedly do injury to the industry to unnecessarily inflame the already

prejudiced mind of a large portion of our population.—H. O. SMITH, Premier Motor Mfg. Co.

GREAT ROAD RACE DESIRABLE

With the existing feeling of the American public towards the automobile, I think it extremely probable that ordinary road races in America would do a great deal more harm to the industry than good. A great race, like the Gordon Bennett cup race, sanctioned by the government and with the course police patrolled, etc., would be quite a different affair, and would arouse the patriotism instead of the prejudices of the public. It would be a great boon to the industry in America if we could secure such a race, and if Mr. Winton, Mr. Owen or Mr. Mooers succeeds in bringing the cup to America, he will be doing an almost incalculable service to the industry in general, which I am sure will be fully appreciated and rewarded.—W. D. GASH, Searchmont Automobile Co.

USE STOCK CARS

We believe that racing is valuable so far as advertising is concerned, and it shows superior power, providing regular stock cars are used. We do not, however, believe in racing freaks, nor do we think it fair to put regular stock cars in the same class with special racing machines, either for speed or hill climbing contests.—J. STEVENS ARMS & TOOL CO.

RACING STAGE PASSED

I have no doubt that automobile racing has served a most useful purpose, first in calling attention to the possibilities of the automobile, and second, in advancing the evolution of the machine—demonstrating its weakness and pointing the way to higher attainments. We have, however, passed this stage and for the future the development will be largely in the direction of development for industrial purposes.—JOHN BRISBEN WALKER, Mobile Co. of America.

QUICKENS DEVELOPMENT

For the reason that automobile racing has thoroughly and more quickly than has been possible by any other medium, demonstrated to the whole world its wonderful possibilities, I have favored racing very strongly. It has shown for nearly a thousand miles that it is capable of an average speed of over 50 miles per hour on wagon roads without a single accident occurring that was due to defects or principles of construction, a feat that I do not believe has ever been equaled in any line of kindred industry by things that move—especially when it is remembered that the automobile industry is still in its infancy.

Anything that engages the public mind is a help to the business as a whole. It does not necessarily follow that the entire trade desires racing machines; in fact, the greatest desire is for another kind which are necessarily freer from complications and more practical in the hands of ordinary drivers. But with the constant effort of all classes of manufacturers of the different types of runabouts, family machines and racers, to excel rivals, each will be the gainer from the efforts of the others, and the perfect type of each will be the result. The process will be similar to horse breeding—different strains being intermingled to breed in any required direction.—E. R. THOMAS, E. R. Thomas Motor Co.

READY TO DETHRONE CHAUFFEURS

New Yorkers Have a Line of Regulations Calculated To Take the Balance of Power Away From Professional Drivers

The regulations for the government of chauffeurs which were prepared by joint committees of the various trade and automobiling organizations in New York last week, have been approved by the American Automobile Association and will be indorsed by the National Association of Automobile Manufacturers at the next meeting of its executive committee.

Copies are to be sent to all clubs, trade associations and garages in states in which either the clubs or the makers' association are represented, with the suggestion that the rules be adopted.

THE REGULATIONS

The regulations in full are as follows:

First—That no commissions of any kind be paid to any chauffeur, either directly or indirectly.

Second—That no commission be paid on any storage account or supplies for storage.

Third—That absolutely no presents be made or inducements given to chauffeurs directly or indirectly, in order to retain, or to obtain customers from competing garages, whether a member of the local dealers' association or not.

Fourth—That each garage be required to send a letter—(form of which is hereto annexed)—immediately upon receipt of a car to the owner of said car to be filled out and signed by him and returned to the garage, and unless said letter be properly filled out, signed and returned, said garage cannot be held responsible for the car.

Fifth—That a register of the name of every chauffeur applying for a position, with his address, and at least two of his former references be kept at each garage which is a member of the local dealers' association, with the ability of each chauffeur so far as is known recorded in this register, and that each and every man who is known to have been discharged at least twice for drunkenness or gross negligence shall be stricken from this register of eligible chauffeurs, which register shall be at all times subject to the inspection of any member of the American Automobile Association, the National Association of Automobile Manufacturers or the local dealers' association.

It shall be the duty of the secretary of the local dealers' association to advise every member of such local dealers' association immediately after the monthly meeting of its executive committee as to the changes necessary to be made in any chauffeur register.

Members of the American Automobile Association so far as possible shall employ only chauffeurs that are duly registered on the books of the local dealers' association.

This eligible list may be obtained from the secretary of the local dealers' association, or from any garage which is a member of said association.

Sixth—That absolutely no goods or merchandise, either new or second hand, be purchased by members of the local dealers' association from chauffeurs or parties other than legitimate dealers—this in order to protect all dealers as well as owners.

Seventh—No dealer in supplies shall sell to a chauffeur any supplies except at list price.

LETTER FOR OWNER'S SIGNATURE

This letter is sent to you, in accordance with Rule 4 of regulations for chauffeurs, adopted by the American Automobile Association, Automobile Club of America, National Association of Automobile Manufacturers, and the New York Automobile Trade Association, to sign and return with the desire to create a more clear and definite understanding between the owner, this management and the chauffeur. Primarily for the benefit and betterment of the services of this garage to its customers and secondly that our orders may be clearly outlined in writing.

The wide divergence in the authority given by different owners to their chauffeurs makes it advisable for us to have direct orders to which we can readily refer, as a protection from unreliable

men, and at the same time a convenience to owners where their men are reliable and can be trusted with some authority in the proper care of their car. In no case can we assume responsibility for that proficient service which we desire to render unless this letter is returned duly signed by the owner only.

First—Is your chauffeur authorized to order slight repairs and obtain necessary supplies for your automobile in your name?

Yes..... No.....

Second—Is he authorized to take the car out at any time during the day or night, presumably for testing purposes without direct orders?

Yes..... No.....

Third—Is he authorized to take the car out at any time during the day or night except in answer to your summons or upon your direct order?

Yes..... No.....

PITTSBURG SIMULATING PROGRESS

Mobile Omnibus Service To Be Established and Big Department Store To Deliver Entirely by Motor Cars

The Mobile Rapid Transit Co. of Irvington, N. Y., will shortly apply for a license to operate steam automobile omnibuses in Pittsburg. The cars will be double decked and similar to those run in Paris during the pleasant months. They will be run between stations and to carry passengers and baggage to all parts of the city. A few years ago the same scheme was tried by the Pittsburg Express Co. in conjunction with its traction service. After a short trial the plan was abandoned on account of the roughly paved streets and hills.

James McCreery & Co., of New York, for whom a twelve-story department store is being erected at the corner of Wood and Virgin streets, Pittsburg, will use automobiles exclusively in their deliveries. The basement of the building is large enough for twenty delivery cars. From the Virgin street entrance the cars will be run onto a large elevator and lowered to the basement. The merchandise as sold will be lowered and packed in the cars in the basement. As each one is filled—one of these machines holds nearly twice as much as an ordinary delivery wagon—it will be run onto the elevator, lifted to the street level and sent out on its trip. Aside from the great gain in time on account of the motor cars being faster than horse drawn wagons, the service will be advantageous in leaving a clear street, when otherwise it would be blocked with a long line of horses.

A few firms in the city are now using one small motor car each for deliveries, but the McCreery company will be the first firm to adopt them exclusively.

USEFUL IN ALL LINES

In the May day parade of motor vehicles given by Thornycroft & Co., of London, Eng., there were seven vehicles used by brewers, one by a laundry, three by contractors for bricks, stones, etc., two by municipal authorities for water carts, and four for mud-carts, two by paper makers, three by furniture removers, six by general manufacturers, and three very heavy vehicles for use in carrying military and other stores in the Congo Free State. The opinion was generally expressed by the users that the adoption of mechanical power had resulted in a great saving in cost for maintenance and a great increase in carrying capacity.

The Elks Lodge, of Rockford, Ill., is negotiating with the Chicago Automobile Club to give a racing exhibition at that place some time in June.

BIG CAR SALES INCREASE IN WEST

Chicago Rapidly Becoming a Lively Market for High Powered Machines—Dealers Have Faith in This Line of Business

Chicago, May 19—Nearly every automobile manufacturer in the United States has succeeded in planting some of his cars in Chicago. This city is a sort of distributing center for the trade, and is regarded with more favor each season by the manufacturers. The immense territory tributary to Chicago offers a good field for future development, and the city itself is rapidly taking to the automobile. The boulevard system offers attractions for pleasure driving for those who do not care to undertake long journeys, while the roads throughout the state are passably good, and tours may be made in comfort during the summer and fall months.

ALL ON MICHIGAN BOULEVARD

Michigan boulevard is the grand promenade for automobiles, and here the motor car is as much in evidence as the horse and carriage. If one has a desire to see some particular make of automobile he has only to take a position on the sidewalk of the boulevard and in a few minutes the machine wanted will come along. The touring car is much in evidence, the American makes taking the lead, and then the French, with a sprinkling of German and English cars.

RUNABOUTS FOR EXPERIENCE

Manager Sykes, of the Chicago branch of the Locomobile Co. of America, speaking to MOTOR AGE, said:

"The tendency this year is decidedly in favor of heavy cars. The heavy car is more durable, will last longer and give better service under all conditions, and is really more economical in the end. The man buying his first car will generally get a runabout to practice on, but as soon as he becomes familiar with the workings of the machine he begins to want a bigger car. We often have buyers who purchase a small car with the understanding at the time of sale that they may trade the little car in on a large one the next season. The runabout can be used only for the purpose indicated by its name, while the touring car will render like service and extend its field of usefulness much farther in proportion to its cost. As people become more familiar with the automobile the demand for heavy cars will increase."

THINKS BIG CARS BEST

"The big touring cars are much the best sellers," said W. L. De La Fontaine, of Pardee & Co., "and I believe the public generally is beginning to realize that those cars are the cheapest in the long run. It costs a little more to run a big car, but the satisfaction and pleasure derived more than compensates for the extra money spent. Incidentally, we are expecting some of our new line of Overland cars this week, and there will be rapid sales in the small car class when they arrive."

J. A. Barton received the new Sandusky runabout this week and is daily expecting a carload that customers who have been waiting patiently may be made happy. His last Shelby was taken off the floor last week, but more are expected soon from the factory.

President Edward Sandelbach, of the Standard Wheel Co., Terre Haute, Ind., was here this week to visit Pardee & Co. in reference to the Overland car, made by the Standard company.

The Haynes-Apperson Co. is now located in its new building at 1422 Michigan boulevard, with H. A. Mack, formerly of Lima, O., in charge. Mr. Mack says the company is from 60 to 90 days behind with orders.

The Motor Supply Co., composed of G. S. Chapin and W. W. Robinson, will be ready for business at 1427 Michigan boulevard about the first of June. A full line of motor supplies will be handled.

FISCHER 'BUS SUITS LONDONERS

Thirty-Passenger Car From America Is Given Strenuous Test Prior To Being Placed in Regular Service

London, England, May 9—A trial trip of the new omnibus built by the Fischer Motor Vehicle Co., of Hoboken, N. J., U. S. A., for the London General Omnibus Co., was made this week. The route was to Richmond Park by way of Isleworth and Brentford and the return trip was through Mortlake and Barnes. The entire trip was made at a fair rate of speed and no difficulties were encountered. The ascent to the Star and Garter hotel was accomplished easily. A large crowd gathered to witness the start and finish, and many complimentary remarks were bestowed upon the American machine and the satisfactory manner in which it ran.

This is the first gasoline-electric omnibus built especially for use in the London streets, and it will be at once put into active service, the route being from the Angel, Islington, to Walham Green. The bus is built on practically the same lines as the other Fischer vehicles, and has a capacity of thirty passengers. It has garden seats on top which are reached by a stairway from the platform at the back. The engine and dynamo are in front with the driver's seat above. The average speed is 12 miles an hour. The wheels have solid rubber Hartford tires.

The motor is of the vertical four-cylinder pattern, and develops about 16 horsepower at 475 revolutions. The dynamo is coupled direct and has an output of 9 kilowatts. The rear wheels are driven by separate motors suspended in front of the back axle. The battery consists of 48 chloride cells placed beneath the seats in the body. They have a capacity of 125 ampere hours at a 3-hour rate of discharge. The electrical connections permit of the vehicle being run without the engine, and of the engine being started from the cells. Besides the ordinary electric brakes there are band brakes on each of the armature shafts of the motors and spoon brakes on the tires of the rear wheels.

The Utah Automobile Co., under the management of F. C. Wilkes, is now in operation at 21 East First street, south, Salt Lake City, Utah. Mr. Wilkes also conducts a large cycle store.

POPE TAKES HOLD ENERGETICALLY

Is Full of Enthusiasm for the Future of the Automobile and Cycle Building Branches of Pope Mfg. Co.

New York, May 17—The Pope Manufacturing Co., newly organized under its former title of world wide fame, began business last Thursday as the successor of the American Bicycle Co. The several plants of the American Cycle Mfg. Co., the International Motor Car Co., and the Federal Mfg. Co., are the assets included in the total purchase price of \$3,500,000, which the court ordered the receivers to accept. Bicycles, automobiles and cycle and motor vehicle parts are their respective products.

MEETS NEWSPAPER MEN

Colonel Pope summoned the newspaper men to announce to them that the pioneer bicycle builder and founder of good roads in this country was once more in the saddle.

Among those that came to extend their congratulations to the colonel were several bicycle journalists of other days, whom he had numbered among his friends of the glorious past.

CYCLING ENTHUSIASM

The colonel was at his best, full of the vigor, courage and enthusiasm that in the past won him the leadership of the bicycle industry of the world, and that he is resolved shall gain for himself and the sport their old place once more. Col. Pope gave one of his old time heart to heart talks to the newspaper boys, pounded his desk in the same old way in the excess of his emphasis, called up favorable similes as of yore from his army experience and altogether aroused among the veterans joyous memories of a great past and firm confidence in a great future for cycling and for the automobile industry, too; for the motor vehicle branch of his business will be subjected to the same vigorous pushing he is resolved to give to cycle building.

The colonel's enthusiasm was so infectious that W. J. Morgan, A. G. Batchelder and the MOTOR AGE man got out their long neglected

bicycles for a ride, and Arthur Jervis, of Motor World, paid \$15 for a new riding suit.

"Seeing these old bicycle boys here naturally makes me talk of bicycling; but you all know that I have an equal enthusiasm for the automobile. Some of you will see the day when there will not be a horse in this city. The horse causes 75 per cent of the wear on our roads and in his filth are half the disease germs that are brought to us. The horse is becoming out of date fast. The solution of the traffic problem in New York is an elevated boulevard around the city for automobiles, bicycles and foot passengers, which can be used for going to and returning from business.

"My factories have facilities for furnishing automobiles of every motive power, type and price the public demands. Yes, I will turn out all kinds. I propose to add a line of machines, which will sell at \$750 each, and meet the great demand for a moderate priced vehicle. The industry is in its infancy. I am not too old to grow up with it and win my place in it."

At the close of the talk all present shook hands with the good, brave old colonel, congratulated him on being in the saddle and at the head once more, and wished him in all sincerity and confidence victory.

ASPHALT IN MOTOR TRADE CENTER

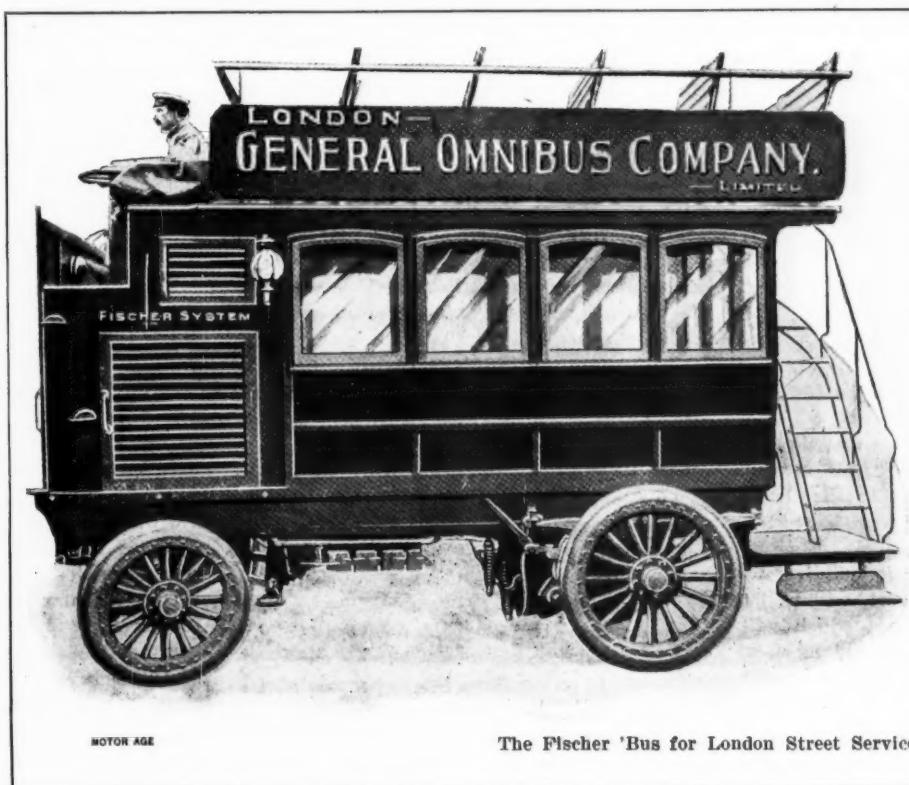
New York Dealers Can in Future Give Demonstration Rides on a Smooth Street-Speed Indicators Popular

New York, May 16—West Thirty-eighth street, the New York retail automobile center, is to be asphalted from Broadway to Eleventh avenue, the contract for the work having been recently signed. This will prove interesting news to those in business in this locality, as the present paving of cobblestones was laid, it is thought, sometime before the war.

Norris Mason, manager of the Societe Franco-Americaine d' Automobiles, has received a 15-horsepower Panhard with a king of the Belgian body by Labourdette, which is attracting considerable attention. It is fitted with the new Krebs carburetor.

The Jones speedmaker is becoming a part of the regular equipment of many of the cars sold in this city. The recent passage of the Bailey bill with the rigid enforcement of the law by the local authorities has made it important for operators to know at just what speed they are traveling. The appliance furnishes legal proof of speed when over zealous policemen in their desire for convictions are inclined to economize with the truth.

An automobile exhibit was given at the fair grounds at New Orleans May 16. There were thirty cars shown, and as it was the first exhibit of the kind in the city it attracted considerable attention.



"MOTORIA, LTD." LONDON'S LATEST

It Will Be a Cross Between a Permanent Exhibition and An Automobile Market Place—Planned on Large Scale

The English gentleman with a desire to own a motor car or any of the accessories thereof, will not be put to the trouble of traveling all over London inspecting the different makes, if the designs of "Motoria, Limited," are successfully carried out.

Motoria, Limited, proposes to establish a universal automobile mart, which will be a permanent exhibition of motor cars, motors, parts and accessories. The company has acquired a lease of Olympia, which is situated at Kensington, in the heart of the fashionable west end. It covers over 6 acres of ground, and four railways have stations adjoining the building.

The exhibition building will have every convenience for facilitating the business of its tenants, and the large covered arena where intending purchasers may view the various cars in operation will tend to promote trade, especially, as the circular naively puts it, "in the metropolis, where the climate is variable."

The managing director of the company is Frederick Jessett, who has for many years been engaged in promoting trades' exhibitions. Only 100 spaces will be guaranteed and tenants will not be allowed to sublet any part of the spaces rented by them. A commission of 5 per cent will be charged on all sales in addition to the rental for the spaces, the prices for which range from \$750 to \$1,750 a year.

The advantages of having a depot where a great many makes of cars and their component parts may be obtained at any time is readily appreciated, and it is thought that the exhibition will be favorably received by both manufacturers and the public.

THE SPACIOUS BUILDING

The ground floor of the main building will have 65 spaces surrounding the arena, each space having a frontage of 12 feet and a depth of 40 feet. These will rent for \$1,750 a year. The arena will occupy a space in the center 300 by 120 feet, and a band stand—with a band—inside this will further add to the pleasures of the visitor. In the main building extension the spaces, 12 by 25 feet, will be let for \$1,400 a year. The gallery, which will be specially available for light automobiles, motor cycles, launches, accessories, etc., will have a "king's corridor" and a "queen's corridor," and here the spaces will rent for \$1,250 a year. In the king's corridor will be situated the prince's house for the reception of

royalty and foreign potentates. In the queen's corridor will be the royal box.

The company will provide a school of instruction and a committee to adjudge efficiency. Certificates will be issued to those who have passed the school, and a list of certificated mechanics and chauffeurs will be maintained for the benefit of customers. The automobile clubs may have, if convenient, local habitations in the building or annexes, and periodical meets, displays and competitions will be arranged in the building, and races held at suitable localities.

BINGHAMTON TO THE FRONT

Binghamton, N. Y., is essentially an automobile city, as the residents have been quick to take up and use the mechanically propelled vehicle. No city of its size in New York contains more machines, and a big parade given last Saturday brought the fact more forcibly



MOTOR AGE

R. W. Whipple's Stock on Parade

before those who have not been watching the trend of events.

The pleasant condition of affairs which permits Binghamton to have an automobile at nearly every corner is due largely to the energy of R. W. Whipple. He is one of the pioneers of the automobile business and his repository at 169 State street would be a credit to any city in the land.

The building occupied by Mr. Whipple is a five-story brick and has a total of over 21,000 square feet of floor space. One floor is used as a repair shop and is fully equipped with all the necessary heavy and bench tools for the careful and quick repairing of cars. An unusually large stock of automobile repair parts and supplies is carried in his stock room.

Last year Mr. Whipple went to Porto Rico to interest capitalists in establishing a mail service across the island. As a result of his trip, a stock company was formed and \$24,000 worth of automobiles shipped to the island. In the past 2 months Mr. Whipple has sold thirteen Winton cars, six carloads of Oldsmobiles and twenty Pierce motorettes, besides a number of special and second-hand cars.

TRADE FACTS FROM THE CAPITAL

Residents Sound False Alarm Over New Garage—Heavily Capitalized Company Organized—Exports Increase

Washington, D. C., May 18—There is a police regulation in force in this city providing that no automobile livery stable or building wherein automobiles are kept for hire shall be erected or established upon any resident street or avenue of the District of Columbia without a written consent of 75 per cent of the resident householders and real estate owners on the side of the square on which the stable is to be located, and also 75 per cent of the resident householders and real estate owners on the confronting side of the opposite square.

Complaint has been made to the authorities that the establishment of the Automobile Stor-

age & Repair Co., on the north side of L street, between Thirteenth and Fourteenth streets, is violating this regulation. The police were directed to investigate the matter and report whether automobiles were kept there for hire and whether, in such case, the provision of the law had been fulfilled. They have reported that no hiring of machines was done there, but only repair work.

Articles of incorporation of the Moakler Automobile Co. have been filed by John M. McClintonck, Wm. C. Dashiell and John J. Nelligan, of this city, and John W. Moakler and Alfred Gould, of New York city, who will constitute the board of directors of the corporation for the first year. The capital stock is \$300,-

000, divided into 300,000 shares of \$1 each. The corporation is formed to do a general automobile business, and will have its principal office and place of business here. The term of its existence is perpetual.

INTERESTING EXPORT FIGURES

Figures compiled by the treasury department show that the exports of automobiles and parts increased from \$88,350 during March, 1902, to \$93,618 during the same month this year, while during the 9 months ending March, 1902, the exports were valued at \$517,532, increasing to \$759,841 during the corresponding period of this year. These figures are interesting as showing the growing popularity of American automobiles in various foreign countries.

Of particular interest to automobile manufacturers are the latest figures compiled by the treasury department showing the shipments of automobiles to our noncontiguous territory, Porto Rico. In March, 1902, the shipments were valued at \$13,789, falling to \$6,784 in March of this year. There was a decided increase, however, in the value of the shipments

for the 9-month period, those for the 9 months ending March, 1902, being valued at \$60,228, as against \$117,938 for the corresponding 9 months of this year.

CARS FOR RUSSIAN POLAND

Official advices from Warsaw, Poland, state that a company is about to be organized in that city with view to introducing automobiles for heavy loads, and that it intends to obtain offers from English, French and Belgian manufacturers. There is said to be a good market for them in that portion of the world, and it might be to the advantage of American makers to look into the matter. On account of various troubles existing in the German Polish provinces, the commercial relations between Russian Poland and Germany have become rather strained, and preference is now given to all goods other than those of German manufacture. Great interest is expressed in American productions, a fact that should attract the attention of manufacturers who desire to extend their export trade.

STATION FOR MOTOR TOURISTS

Syracuse Company Organized To Establish Garage Especially Adapted To Care for Cross Country Motorists

Syracuse, N. Y., May 18—The Central City Automobile Co., with a capital of \$10,000, was formed in this city last week and steps have been taken towards its incorporation at Albany. The members of the company are M. C. Blackman, formerly manager of the Syracuse Automobile Co., Charles L. Kennedy and Henry Walters, all of Syracuse.

The new company has leased large double stores in the Lynch block, which front on East Genesee street within a few doors of the city hall and the Yates hotel, and which run through to East Fayette street. The two streets are the ones on which tourists generally enter Syracuse, and the nearness to the center of the town is a further location advantage.

There will be accommodations for 100 large machines with lockers for each patron. The carriage entrance will be on East Fayette street and luxurious waiting rooms will be fitted up in the front of the stores in East Genesee street. A corps of expert chauffeurs and assistants and a large repair shop will be features of the establishment, which will cater to local enthusiasts as well as to tourists. The station will be open night and day.

Mr. Blackman will probably be chosen president of the company and Henry Walters the attorney. Mr. Kennedy is well known among local automobileists, having been demonstrator for the Syracuse Automobile Co. last winter.

ORIENT BUCKBOARD \$375

The Waltham Mfg. Co., of Waltham, Mass., has set a somewhat startling pace by reducing the price of its Orient Buckboard from \$500 to \$375. This machine is not a family touring car, but it is said to run with considerable alacrity on the level and up hills, and marketed at the extremely low price of \$375 ought to attain a wide popularity without much delay.

BRISCOE FIRE NO DELAY

The fire at the plant of the Briscoe Mfg. Co., Detroit, on the morning of May 13, was not serious and delayed business only a few hours. Orders were being filled and shipped the same day as usual.

EXCELLENT ACCUMULATOR SERVICE

Akron's Electric Patrol Used Continually Over 3 Years Without Storage Battery Deterioration—Cleveland Makers Enjoy

Cleveland, O., May 19—T. C. Willard, general manager of the Willard Storage Battery Co., claims there is no greater mistake than the popular belief that the storage battery is the most troublesome part of the electric vehicle. He claims that with proper care, the storage battery will retain its efficiency as long as the motor or any other part of the car, and as proof of his contention points to the case of the battery outfit in the famous automobile patrol wagon used by the Akron, O., police department.

This was one of the first vehicles of its kind built in this country. It was placed in service in October, 1899, and a Willard battery formed a leading part of the equipment. Since then the vehicle has been in continuous service and has seen much strenuous life, including the unusual proceeding of being dumped in the canal at the time of the Akron riots 2 years ago. Even this rough treatment did not lessen the efficiency of the battery.

MUCH HARD WORK

The vehicle was designed by F. F. Loomis, mechanical engineer of the city of Akron, and a careful record has been kept of its performance in order to determine the relative cost of maintaining a wagon of this type as compared with the old horse drawn wagon. The economy of the automobile is so marked that the horse is hopelessly outclassed. It is claimed there has been a saving of 63 per cent over the horse drawn vehicle, figuring on the same amount of work. This takes into consideration every possible item, including interest on money invested in real estate, etc. The wagon has carried 12,085 people—bad town, Akron—and has made an average of three and three-quarter runs per day, with a maximum of fifteen runs in one day. Up to April 19 it had covered 6,706 miles in actual service. This is considered a very remarkable showing in view of the fact that Akron is noted for being a city of hills. It is practically impossible for the wagon to make a run without climbing grades ranging from 6 to 14 per cent, and from 100 to 1,200 feet long.

EXPLOSION EN ROUTE

Manufacturers of gasoline or steam vehicles might well make a rule requiring shipping clerks to carefully empty gasoline tanks before shipping vehicles by rail. The railroads have a rule of this kind but it sometimes happens that the employes of the automobile company are in a hurry and rush a machine to the station and into a car without taking this precaution. The fact that serious trouble is likely to result from such negligence was demonstrated to a Cleveland manufacturer recently. An agent in a distant city notified the manufacturer that he had no use for the wreck of a machine that had been delivered to him by the railroad company.

Investigation showed that the machine had been shipped in good shape and complaint was made to the transportation company. The claim agent of this company made inquiries and learned that the car had suffered an explosion while en route. It was claimed that gasoline had been left in the tank and that the heat in the car had ignited the gas generated. The damage to the machine was esti-

mated at \$600 and as the evidence was against him, the manufacturer could do nothing but swallow his loss and discharge the careless employee.

WORKMEN WANT HIGHER WAGES

Within the past week several local concerns have been obliged to wrestle with labor troubles in addition to the great difficulties experienced in securing prompt deliveries of material. There has been no concerted action among machinists, but the demands have been general among all the employes of certain factories.

Several managers have been approached by shop committees asking for shorter hours and increased pay. In one shop the demand was for a 9-hour day with a 12½ per cent increase per hour. To comply with such a demand would mean adding practically 20 per cent to the labor item, since not only would the expenses be increased but the production would be cut down. Naturally the managers who were confronted with the alternative of yielding or shutting up shop were inclined to arbitrate when they thought of their full order books and anxious agents. In nearly every case the trouble was adjusted in its early stages.

KEEP AWAY FROM CANADA, PLEASE

You Will Have to Pay 25 Per Cent Ad Valorem Duty If You Drive Your Automobile Across the Line

An a result of an order recently issued by the Canadian customs officials, no more American automobileists will be permitted to go into Canada with their automobiles without paying full duty on their machines. The duty is 25 per cent of the assessed valuation of the car, and this duty will be collected each time a machine is taken into Canada. The duty is placed not only on American machines, but on all makes that are in use in this country and that may be taken into Canada by their owners for any purpose whatsoever.

The order was issued, it is said, because American manufacturers made a practice of sending automobiles into Canada ostensibly on pleasure trips, and then selling the machines there, thus avoiding the payment of duty. The greatest complaint, according to the Canadian customs officers, came from Niagara Falls, Ont., through which place hundreds of machines are alleged to have passed without payment of duty, and been then sold in Canada.

Many Buffalo people have their summer homes in Canada, and this order bars them from driving to and from them. An endeavor will be made to arrange whereby the short trips into Canada, which have been such sources of pleasure to them, may not be interrupted this summer, or at least, that persons owning summer homes may be permitted to go to and from these homes without paying duty.

RECENT INCORPORATIONS

Moakler Automobile Co., of Washington, D. C.; capital stock, \$300,000; incorporators, John McClintock, William C. Dashiel, John J. Nelligan, John W. Moakler and Alfred Gould.

Arkansas Automobile Co., of Little Rock, Ark.; capital stock, \$10,000; president, J. W. Lippincott; vice president, C. T. Coffman; secretary, E. L. Goodbar.

South Broad Street Automobile Co., of Philadelphia; capital, \$5,000.



THE READERS' CLEARING HOUSE

TWO-CYCLE MOTOR ADVANTAGES

Syracuse, N. Y.—Editor MOTOR AGE—I often wonder why automobile builders do not give more attention to the two-cycle type of motor. It appears almost obvious, even to the inexperienced, that this type of motor can be constructed and made to operate in a thoroughly reliable manner; the weight ought to be brought down to nearly one-half of that of a four-cycle motor of the same stroke and bore, for the same power. Many attempts, I understand, have been made to construct such a motor, with more or less success, and it is a matter for comment why builders of automobiles do not devote more time and attention to this subject. Already two-cycle motors for motor cycle use are being made and marketed both in this country and abroad. The advantage of getting double the number of impulses or working strokes for a given number of revolutions of the motor, and consequently a more constant strain or torque upon the motor shaft, is a matter worthy of careful consideration. This type of gasoline motor more nearly approaches steam engine practice, and should allow the use of a lighter fly wheel than is possible with a four-cycle motor of the same dimensions. It must be rememoered, however, that with the two-cycle motor the greatest difficulty is that of properly scavenging the cylinder at the end of the explosion stroke and also obtaining a perfectly fresh explosive charge not weakened or defiled by the products of combustion of the prior charge. In this respect the four-cycle motor, so far, is ahead of the two-cycle motor.

The theory of complete stratification held by the earlier advocates of the two-cycle motor, that the fresh charge of mixture does not mix with the products of combustion of the former charge, but drives them before it out of the cylinder, does not hold water in practice, and builders have become satisfied the fresh charge of mixture and the products of combustion become more or less mixed together. In spite of this disadvantage the two-cycle motor if properly designed ought to have several advantages over the four-cycle type, which are lighter weight for the same power, the dispensing of mechanically operated valves and the obviation of the two-to-one gearing.—F. S. M.

QUESTIONS OF HORSEPOWER

Waltham, Mass.—Editor MOTOR AGE—I am building a gasoline motor of 4-inch bore and 4½-inch stroke. What horsepower should this motor develop and what diameter and weight of rim should the fly wheel have?—R. B.

A motor of 4-inch bore and 4½-inch stroke should develop 4 horsepower at 900 revolutions per minute. The fly wheel should be 15 inches in diameter and the rim should weigh 50 pounds.

Davenport, Ia.—Editor MOTOR AGE—What should be the bore and stroke of a four-cycle gasoline motor to develop 5 horsepower at 1,500 revolutions per minute? Also up what per cent. of grade should a 5-horsepower motor take a car weighing 800 pounds at the rate of 10 miles per hour?—J. Goos.

A motor of 4½-inch bore and stroke will easily develop 5 horsepower at from 1,200 to

1,500 revolutions per minute. A 5-horsepower motor should take an 800 pound car up a 20-per cent grade at a speed of 10 miles per hour.

Freemont, Neb.—Editor MOTOR AGE—What horsepower should a single cylinder motor of 6-inch and 6½-inch stroke develop at 600 revolutions per minute and what should be the length of the clearance or space in the combustion chamber for a compression of 60 pounds gauge pressure?—H. E. V.

A single cylinder motor of 6-inch bore and 6½-inch stroke should develop 9 horsepower at 600 revolutions per minute. For a compression of 60 pounds, gauge pressure, the clearance in the combustion chamber should be about 1½ inches.

Canton, Ohio—Editor MOTOR AGE—At what speed should a motor of 4½-inch bore and stroke run to develop 6 actual horsepower, and what should be the diameter and weight of the rim of the fly wheel?—J. B.

A motor of 4½-inch bore and stroke will develop 6 actual horsepower at 960 revolutions per minute. The diameter of the fly wheel should be 14 inches and the weight of the rim about 65 to 70 pounds.

Reading, Pa.—Editor MOTOR AGE—What horsepower should a single-cylinder, two-piston motor develop, with 6-inch bore and 5-inch stroke for each piston, making a total stroke of 10 inches?—G. L.

At 500 revolutions per minute such a motor should develop at least 12 horsepower.

La Salle, Ill.—Editor MOTOR AGE—What horsepower should a motor of 5-inch bore and 6-inch stroke develop at 600 revolutions per minute with 65 pounds compression, gauge pressure?—J. B.

A motor of 5-inch bore and 6-inch stroke at 600 revolutions per minute, with 65 pounds compression, should develop 6 horsepower.

REPAIRING BATTERY CELLS

Louisville, Ky.—Editor MOTOR AGE—What is the best way to repair cracks in storage battery cells made of vulcanite? I have tried a rubber solution but it does not seem to work satisfactorily.—T. A.

Dissolve gelatine in water until it is the consistency of jelly, then add sufficient acetic acid to make a thick solution. Obtain some strip of fibrite or hard rubber about 1-32 of an inch thick and coat both the cracked place in the cell and the fibrite strip with the solution. When almost dry, clamp firmly together and allow the patch to remain clamped for at least 48 hours.

TWO-CYCLE MOTOR PARTS

Cleveland, Ohio—Editor MOTOR AGE—I wish to build a two-cycle motor of 3-inch bore and 3½-inch stroke. What should be the width of the inlet and exhaust port openings in the direction of the travel of the piston? If such a motor were to be built for a speed of 500 revolutions per minute and a similar one for 1,500 revolutions per minute, what would be the width of the ports in each case?—C. H. B.

The usual rule for the width of the ports in two-cycle motors, is one-sixth of the piston travel for the exhaust port and one-seventh

of the piston travel for the inlet port, with the lower edge of both ports in line at the end of the piston travel. The port width should remain the same in either case, as the object is to get rid of the exhaust gases and allow the new charge to enter the cylinder with as little friction loss as possible. Unless the two motors are of widely different bore and stroke, such a comparison of speeds is hardly conceivable.

USE OF AMPERE METER

New London, Conn.—Editor MOTOR AGE—Is it necessary that the ampere meter shown in the storage battery charging outfit recently described in MOTOR AGE should be kept permanently in the circuit or only at the start? —M. S.

The ampere meter is intended to remain in the circuit the whole of the time that the batteries are charging.

MOTOR DIMENSIONS

Reading, Pa.—Editor MOTOR AGE—We are very much interested in the design of the air-cooled motor in MOTOR AGE, May 7, as we are at present making the patterns for a 3½ by 3½-

A	B	C	D	E	F	G	H	I
4	3½	2½	3½	8	11	¾	4¼	3½
K	L	M	N	O	P	R	S	T
2½	1½	1½	2½	1½	1½	2½	2½	1½
U	V	W	Y	A'	B'	C'	D'	E'
3½	1½	9½	4½	4½	¾	1½	½	¾

Dimensions of Air-Cooled Motor

inch motor very similar to the one illustrated. Can you give us any idea of the weight of this motor and the general dimensions of the same?—Xander Machine & Supply Co.

The motor should weigh about 75 pounds without the fly wheel, which should be about 12 inches in diameter and with a rim weighing about 35 to 40 pounds. The general dimensions of the motor are given in the table in connection with the letters on the drawing.

EXTRA GAP IN TREMBLER CIRCUIT

Cleveland, O.—Editor MOTOR AGE—My gasoline motor is fitted with an ignition device of the De Dion type with trembler. I recently attached the new spark devices in the secondary circuit, thinking to increase the efficiency of the spark, but the motor works better without the spark gap device than with it. Can you give me any reason for this?—J. K.

When the De Dion type of ignition device is used the trembler spring acts in the same manner as the extra spark gap, which is therefore not necessary, as the resistance of the path of the secondary current is increased without producing any better results.

THAT POWER INCREASING MUFFLER

Westfield, Mass.—Editor MOTOR AGE—We notice an explanation of the muffler phenomenon by Mr. Higdon in the last issue of MOTOR AGE and we think if he will stop and consider a minute he will see the fallacy of his argument.

When the gas leaves the muffler it has but a very slight pressure, indeed a very few ounces. If it had more there would be so much back pressure in the cylinder that a full charge could not be introduced. The muffler

in the ordinary motor cycle is placed in such a manner that it usually discharges against some part of the wheel or frame. In fact, the rush of the machine through the air would cause a vortex in the air into which the muffler would discharge, and the vortex would have a tendency to draw the gas from the muffler rather than retard its escape from the muffler to assist in jet propulsion.—LOOMIS AUTOMOBILE CO.

Rahway, N. J.—Editor MOTOR AGE—The article by John C. Higdon, M. E., in the issue of May 7, in which he explains that Mr. Mount's machine blew itself and Mr. Mount up the hill, is very good, but although not an M. E., I would venture a few corrections.

In the first place, the holes in the Mount muffler do not lead to the rear but in as many different directions as possible, while the hole in the exhaust pipe is in the rear. This should do away with the "jet motor" theory.

In the second place, Mr. Mount and I tried to make his machine propel itself by taking off the belt and shooting the exhaust out behind. It never moved! That should smash his theory.

The explanation of the motor having the same amount of power with the muffler closed as with it open, is very simple. The muffler acts as a surface condenser or radiator and the pressure at the outlet of muffler is not as much as at the exhaust valve and instead of retarding the exhaust, only tends to heat the combustion chamber a little, which accounts for the increase in power. The proof of this last may be had from anyone who has run a lathe with an air cooled engine and noticed the tremendous difference between the amount of power developed at the time of starting cold and that developed when the engine has reached a nice cherry red.—JOS. J. BOLAND.

MAKE AND BREAK IGNITION

Kansas City, Mo.—Editor MOTOR AGE—Can an ignition of the make and break form be run at as high a rate of speed as the jump spark form of ignition, and how is it accomplished?—A. B.

Motors of European make are using the make and break form of ignition very successfully at speeds from 1,200 to 1,500 revolutions per minute. It requires that the ignition points must be kept in contact or on a closed circuit for at least one and one-half revolutions, and a specially wound primary spark coil of high resistance to operate with a battery or generator of at least 20 volts.

CUSHION TIRES

Akron, Ohio—Editor MOTOR AGE—As I am annoyed a great deal with punctures in the tires of my automobile, I would like to ask if it is not possible to obtain some form of cushion or solid tire that

would be a good substitute for the pneumatic tire?—B. F.

Cushion and solid tires are made which yield a certain degree of resiliency, but it is of course out of the question to make one that is quite as resilient as a pneumatic tire.

FLY WHEEL TOO LIGHT

Madison, Wis.—Editor MOTOR AGE—I have recently finished a cycle motor from castings that I purchased, and after trying the motor it does not run satisfactorily. When the explosions take place the fly wheels do not seem to have sufficient momentum to keep the motor going, or rather to carry it over the next compression stroke. The fly wheels are 6½ inches in diameter with rims ½-inch wide and 1½-inch deep, and weigh together 8½ pounds. The motor is well made and the compression good. The cylinder is 2½-inch bore and 3-inch stroke. Are not the fly wheels too light, and what horsepower should this motor develop?—F. T.

For a motor of 2½-inch bore and 3-inch stroke the fly wheels should weigh at least 14 pounds. The horsepower should be about 2½ at 1,800 revolutions per minute.

COMPRESSED AIR CAR

Boone, Ia.—Editor MOTOR AGE—Could not a double-acting air pump be attached to a gasoline motor and air stored in a steel

tank to a pressure of 200 or 300 pounds? The air thus compressed could be used in an air motor entirely independent of the gasoline motor to propel the car. By means of this arrangement the greatest degree of flexibility could be secured, as the ordinary form of speed transmission would be dispensed with and the car controlled exactly the same as a steam machine.—W. R.

This scheme has been tried in several ways but has never been fully developed and is probably a difficult mechanical problem to solve with commercially practical results.

USE OF VIBRATOR COIL

Las Vegas, N. M.—Editor MOTOR AGE—which will give the more satisfactory results, a plain jump spark or a vibrator coil, and what change would be necessary on the ignition mechanism to replace a plain jump spark with

The vibrator coil will give far better results and insure positive firing of the charge, but the insulation of the secondary wires leading from the coil to the motor, will have to be of a very high class. With a plain coil the spark is only made when the electrical circuit is broken by the contact maker, while with a vibrator coil the plug commences to emit a stream of sparks the instant the electrical circuit is closed. The cam of the contact maker must therefore be set back so that the front or leading end of the cam nose is in the position that the rear end previously occupied.

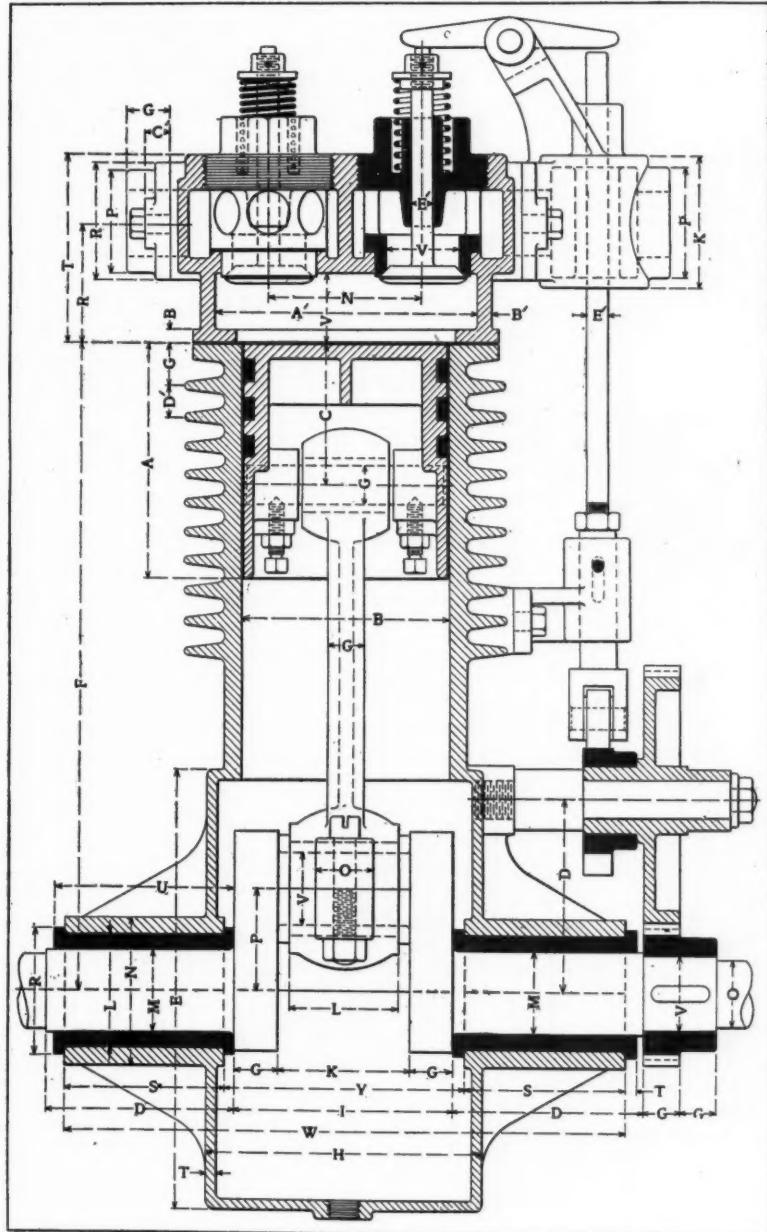
MAXIMUM PISTON SPEED

Chicago, Ill.—Editor MOTOR AGE—Being a constant reader of MOTOR AGE and also much interested in the Readers' Clearing House, I wish to ask what is the usual piston velocity in feet per minute for high and low or medium speed gasoline motors. Has a gasoline motor ever been built with a 6-inch stroke that would run at 6,000 revolutions per minute?—A. H. L.

The maximum piston velocity obtained by automobile gasoline motors is about 1,200 feet per minute, but this is excessive and is not good practice. The usual or average piston velocity for high speed motors is 900 feet per minute, and 600 feet per minute for low or medium speed motors. MOTOR AGE does not know of any gasoline motor ever designed or built to run at a piston velocity of 6,000 feet per minute. Such a velocity would be impracticable and absurd.

CLEAN THE PIPES

Once a month it is a good plan to wash out the water pipes, water jacket and water tank with a strong solution of common soda or lye. Let the motor run a few minutes before emptying the solution, then empty the tank and pipes and repeat the operation with clean water. This process will tend to insure uniformly effective circulation of the water.



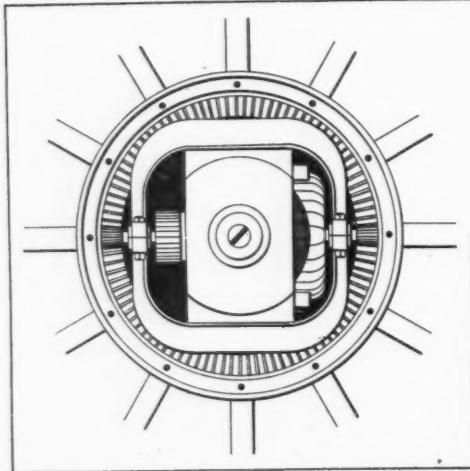
Dimensions of Air-Cooled Motor

NEWLY DEVELOPED AUTOMOBILE AND PARTS

One of the most untiring among persistent inventors is A. B. Holson, of Chicago. Mr. Holson is a genial genius who, without ostentation in any way, has for over 3 years kept constantly at work in the development of an electric motor which by its peculiar construction serves two purposes that recommend it to such classes of work as the propulsion of automobiles.

In the first place it is said, and seemingly well substantiated, that the motor effects a considerable saving in power; in the second place its compact construction and the concentric arrangement of its driving and driven members, render it capable of being conveniently incorporated in the traction wheel hubs.

The chief characteristic of the motor is that by a slight displacement of the armature shaft from the axial line, diametrically opposite bevel pinions on radial stub shafts engage and drive two concentric bevel gears attached to the casing or driven member of the motor, one pinion meshing with one gear and the other pinion with the opposite gear. This disposition of the driving element causes an equal division of the power transmitted to the two driven gears and compensates the tendency toward end thrust commonly noticeable in bevel gear transmission.



The Holson Motor

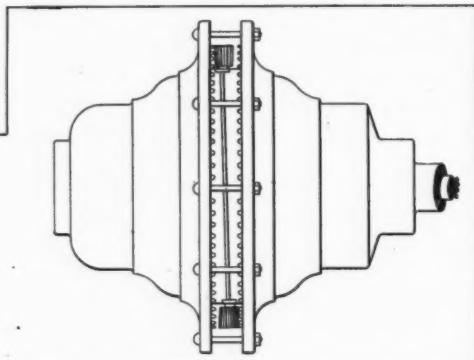
Great claims are made for the efficiency of the motor, and mechanical engineers of established reputation report favorably upon its operation. Fred A. Rogers, of the Lewis Institute, of Chicago, recently tested the motor by means of an ordinary prony brake and reported that it showed an efficiency of 99 per cent up to 16 per cent overload, and an efficiency of 86 per cent at 68 per cent overload.

Recently a company has been organized at Grand Rapids, Mich., by M. B. Church, who is preparing to develop the motor commercially under the trade name of Gyroscope. An experimental car, which incidentally is an ordinary Columbia runabout rebuilt, is running around Grand Rapids to demonstrate the practicability of the motor as an hub motor for electric automobiles. The company does not propose to manufacture the complete automobile nor even the complete motor, but will establish patterns for various sizes and purposes, and then dispose of the rights to use them. Mr. Church accentuates the fact that the motor is applicable to a great number of mechanical purposes, one of the most interesting of which is the proposed adaptation of the motor to an electro-gasoline automobile. The

very reasonable assertion is made in this instance that the Holson motor is especially well suited to such a vehicle on account of the readiness with which it can be applied to the gasoline motor fly wheel, there to act both as a motor and generator.

MOHLER AND DEGRESS FOUR-CYLINDER MOTOR

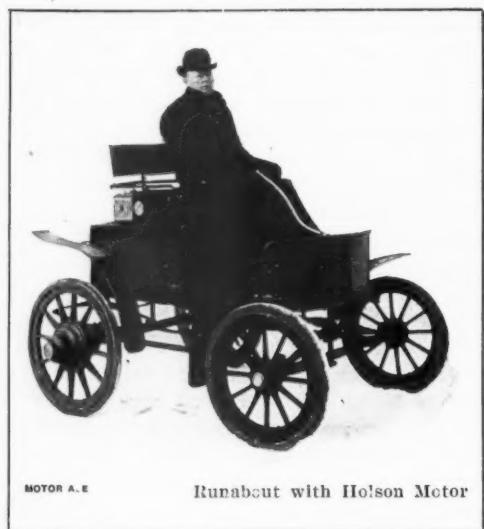
Mohler & DeGress, of Long Island City, N. Y., have recently brought out the four-cylinder vertical motor illustrated. This was originally built to order for a customer, but has been added to the regular line of Mohler & DeGress motors. It is rated at 20 brake horsepower and has equal bore and stroke of $4\frac{1}{2}$ inches. It weighs complete 430 pounds. Each cylinder is cast separately, but the head and valve chambers on each are integral with the cylinder. This construction adds about 1 inch in total length over that of the unit system of casting, and also necessitates an extra pipe joint, but it permits center crank pins with bearings of equal length on each side. All three of the inside crank shaft bearings are



contained in the upper half of the aluminum base, thus allowing the lower half of the casing to be removed without disturbing the crank shaft, which, by the way, is of forged steel.

The lubrication is by gravity feed from a reservoir on the rear pin of the motor. This has six feeds, one to each cylinder and one to each half of the crank chambers which is partitioned in the center to prevent oil from splashing from one section to the other. The center crank bearings and the connecting rod bearings are provided with large oil catches to insure ample lubrication by the splash system.

The water inlet is on the left side of the motor near the bottom of the cylinder water jackets, while the outlets are directly from the top of the cylinder head. The exhaust and inlet valves are on opposite sides of the cylinder and all valves are mechanically operated



Runabout with Holson Motor

and interchangeable. The cam shafts are inclosed in the upper half of the crank chamber and the cam gears are encased on the front end of the chamber. The motor is equipped with a throttle governor which is located in the central port or chamber of the main inlet pipe, and which is actuated by a centrifugal governor mechanism upon the inlet valve cam gearing. The motor is furnished complete ready to mount with all pipe fittings attached.

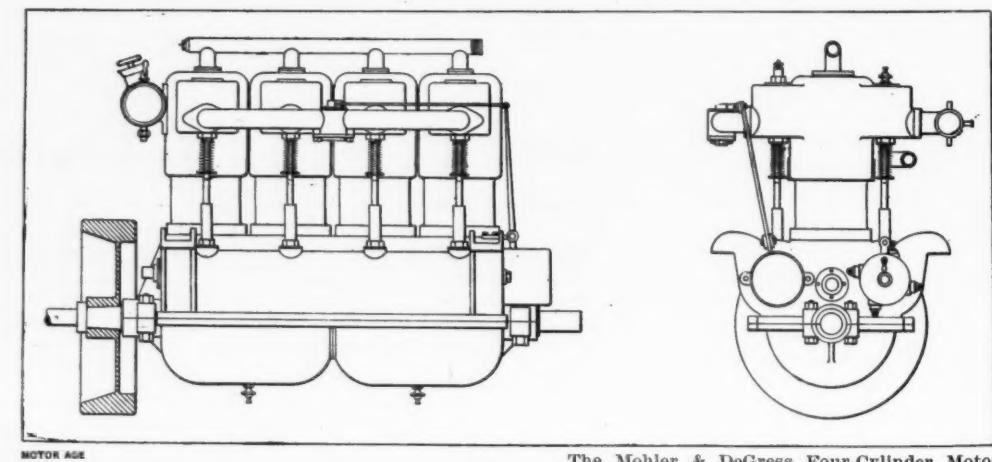
THE EXIDE IGNITION BATTERY

Owing to the great increase in the use of gasoline vehicles and the numerous demands for reliable storage batteries for ignition outfits, the Electric Storage Battery Co., of Philadelphia, has recently placed on the market a special type of cell known as the Exide sparking battery.

A price list just issued describes fourteen sizes of these sparking cells, ranging from 33 to 85 ampere hours' capacity, and with varying dimensions enabling them to be placed in any style of vehicle. When exhausted they may be recharged from any direct lighting current circuit with the addition of proper resistance.

KIDDER'S GASOLINE CAR

Boston, Mass.—Editor MOTOR AGE—Since putting out a few of my first experimental steam cars, a few years ago, I have, with 25 years' practical experience as a mechanical and constructing engineer, continued a close student of the automobile problems. While I do not abandon steam I recognize a great future for gasoline also, and have devoted much time to gasoline cars during the past 2 years.



The Mohler & DeGress Four-Cylinder Motor

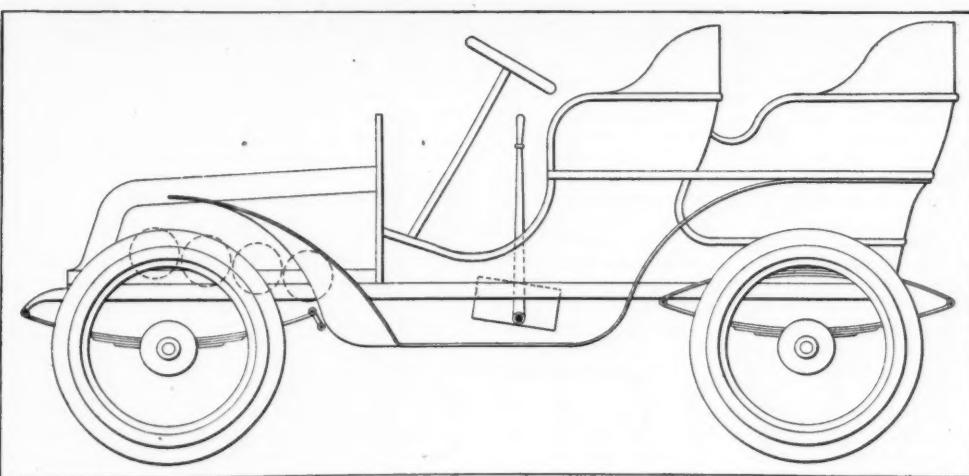
The drawings show the general system of construction of my 20-horse-power horizontal four-cylinder, direct bevel-gear driven gasoline touring car, the construction of which was begun in September last, and which is nearly completed. This arrangement of four cylinders on one side of the crank shaft, with direct bevel gear drive to a spur differential on rear axle, is new with me so far as I am advised, and embraces, I believe, the following advantages:

No part of either the cylinders or crank case projects below the base of the body, leaving a clean underline without the appearance of cumbersome weight.

As compared with vertical motors, the pulsations of the explosions act at right angles to the direction of spring action, meeting a comparatively rigid resistance and thereby reducing vibration.

The center of gravity is low, there being very little motor displacement above the base of the body, and requiring only a low bonnet.

The small vertical space occupied by the motor especially adapts the same running gear and mechanism to a wide range of use from



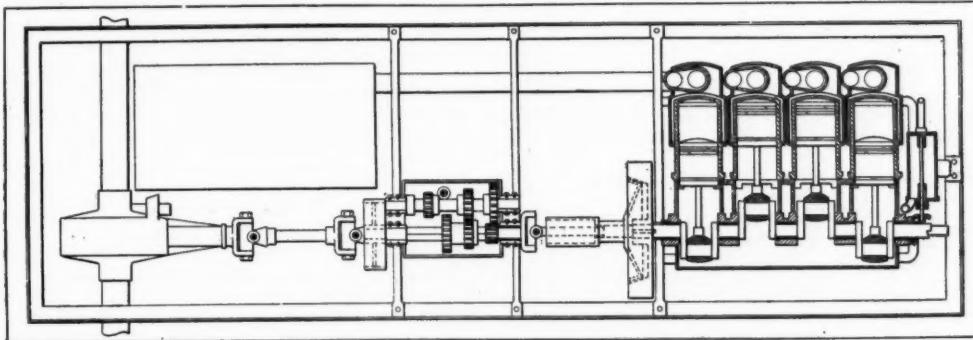
The Kidder Gasoline Car

nally controlled by a throttle. The water circulation is by a gear driven propeller screw pump.

The sliding gear transmission furnishes three forward speeds with direct drive on the third. The speed ratios are 9, 15 and 30

brakes in drums on the rear hubs. These are pedal actuated. The levers interlock to prevent change of speed except when the driving clutch is disengaged. The transmission gear case, like the motor, has three-point suspension.

Three large mufflers which may be cut out at will are employed to deaden the exhaust.—WELLINGTON P. KIDDER.



MOTOR AGE

The Kidder Gasoline Car

the family surrey and tonneau to the omnibus and delivery wagon.

Oblong wear on the working side of the cylinder bore is less as the upward diagonal or side thrust of the connecting rod is partly offset by the weight of the piston and con-nection.

The crank case and many other important parts are more readily accessible.

The weight of vehicle complete is 2,000 pounds. The wheel base is 90 inches, and the tread 4 feet 6 inches. The wood wheels have 1½-inch spokes, artillery hubs 8 inches in diameter, and 32-inch by 3½-inch double tube clincher tires. The rear divided axle is 1¾ inches in diameter, and is solid, encased and running in oil. The bevel gear drive is enclosed, dust proof and runs in oil, and has an enclosed frustum anti-friction roller to take side thrust. The forward axle is 1½ inches in diameter, with Billings & Spencer forged steel steering forks and knuckles. There are roller bearings in the front wheels. Irreversible wheel steering with the wheel swinging forward out of the way in entering is used.

The frame is reachless of 2 by 2 by ¼-inch angle steel, trussed, and has semi-elliptic springs in front and full elliptic springs in the rear. The motor has three-point suspension and is of 5-inch bore and stroke. All gears are encased and run in oil. The crank shaft is 1½ inches in diameter and has five bearings to journals, each 2½ inches long. The fly wheel is 17 inches in diameter and weighs 100 pounds.

Both inlet and exhaust valves are vertical and both mechanically operated. The ignition is timed by a governor. The motor is nomi-

miles an hour. There are two operating levers, one for the sliding gears and the other for the clutch and brake. In addition to the transmission brake there are two internal expanding

PREScott STEAM DELIVERY
The illustration shows the new steam delivery wagon introduced by the Prescott Automobile Co., of New York. The general system of construction is similar to that of the regular Prescott steam carriages, the chief difference being in design and in the construction of the running gear. The entire body is low upon the running gear, which is of the reachless type. The wheel base is 70 inches and the tread 54 inches. The engine is of 8 horsepower, the water tank has a capacity of 42 gallons and the gasoline tank a capacity of 8 gallons. The portion of the body available for the carriage of goods is 34 inches wide, 44 inches long and 42 inches high. The car is as handsomely finished as a pleasure carriage.



MOTOR AGE

New Prescott Delivery Wagon

FARMERS FIND NUMEROUS USES FOR THE AUTOMOBILE

The average farmer is an ingenious person. Through the very nature of his isolation he is frequently forced to depend on his wits to help him out of difficulties. To the city man the automobile is a source of pleasure and a convenient method of getting around quickly; that is about the limit. But to the farmer the self propelled vehicle presents almost endless possibilities. Within the past few days Ohio has furnished several new methods in which the automobile has figured in helping denizens of the rural districts out of difficulties; difficulties occasioned in most cases by the fallibility of the hitherto indispensable horse.

George and H. L. Raser, residing near Ashland, O., recently purchased an automobile and proceeded to make it earn its gasoline in the menial service of pulling a mower. The machine made no objections; in fact seemed to take kindly to the work and has fully demonstrated that it can beat any two-horse combination in harvesting horse feed.

SAVED A HAY FIELD

Last week a farmer near Conneaut discovered that a passing locomotive had thrown a spark into his pasture and that a young prairie fire was fast playing havoc with his crop of hay. The usual procedure is to plow a furrow around a conflagration, thus preventing it spreading. But the farmer's horses had gone to town and while he was worrying a man in an automobile hove in sight. In less time than it takes to tell it the car had been hitched by a chain to a convenient plow and was snaking a dead line around that

whirlwind of flame. It is said that the man who guided the plow made some of the liveliest moves of his life, and after it was all over the farmer's horse swapping instinct cropped out and he endeavored to make a trade for the motor on the spot.

BETTER THAN A WIND MILL

A progressive farmer near Canton who owned an automobile had for some months been saving time and money by towing wagon loads of grain to the nearby town. One day he was anxious to grind some feed, but the weather man was unable to supply the necessary power for the wind mill. Ingenuity asserted itself and the farmer ran his automobile into the barn, jacked up the wheels, passed a belt over one of the rear tires and turned the power into the grinding machine. Since then the wind mill has been retired from service in favor of the new method.

IN RURAL MAIL DELIVERY

At New Carlisle, O., the horses owned by J. F. Brubaker, a rural mail man, recently became sick, and for a time he was in deep trouble, since Uncle Sam makes no allowance for sick horses. Then the carrier be-thought himself of a friend who owned an automobile and straightway bargained for his services. As a result Mr. Brubaker is saving his spare change with a view to buying an automobile, for he figures that with the aid of a speedy and tireless machine he will be able to make a bid for the merging of two mail routes into one, with a corresponding increase in emoluments. The length of Mr. Brubaker's

rural mail route is 26 miles. The average length of time that it takes to cover the route with the ordinary wagon ranges from $5\frac{1}{2}$ to $6\frac{1}{2}$ hours; while with the automobile the route was covered in 2 hours, 45 minutes. One hundred and two pieces of mail were collected and 212 pieces distributed.

HUNTING WITH A LOCO

One of the most novel uses of the automobile is credited to Frank Young, of Kaneville, Ill. The Young farm has been considerably troubled by ground hogs, and the broad acres were full of holes dug by these industrious creatures. A few days ago Mr. Young and his father drove their Locomobile into the back pasture, and removing the safety valve, attached a piece of garden hose to the boiler of the steamer. The other end of the hose was inserted into a hole in the ground and the steam turned on. Young was armed with a shot gun, and he stood back a few yards ready for action.

Soon the steam began to penetrate the corridors of the Ground Hog home, and from the different exits were seen the tips of the noses of the Ground Hog family. As fast as they appeared on the surface they were shot by Mr. Young. In a short time he had killed nine ground hogs, and he also captured eight young wolves that were driven out in the same manner. The state paid a bounty of \$5 each for the wolves, so that the morning's sport netted \$40, besides ridding the farm of the ground hogs. The farmer who contemplates the purchase of an automobile should consider the value of a steam machine as an adjunct to hunting.

FROM THE

The Detroit race meet will be held some time in August.

The thirty automobilists of Spokane, Wash., are organizing a club.

The International Automobile Agency, of New York, has removed from 2669 Broadway to 109 West Thirty-seventh street.

The Buffalo Gasoline Motor Co., of Buffalo, N. Y., will erect a new factory at Auburn avenue and Niagara street, that city.

Robert L. Winkley, manager of the department of publicity of the Pope Mfg. Co., is now located at 21 Park Row, New York.

In England, previous to the year 1895 all mechanically driven carriages could travel the public roads only at a walking pace.

The Gordon Bennett cup will be on exhibition during the month of June at the establishment of West & Son, College Green Dublin.

The Magnolia Automobile Co., of Riverside, Cal., has completed its first automobile and will soon be in a position to turn more out rapidly.

The Chamber of Commerce of Riverside, Cal., is planning to build a boulevard 5 miles long from Rubidoux Heights and around Rubidoux mountain.

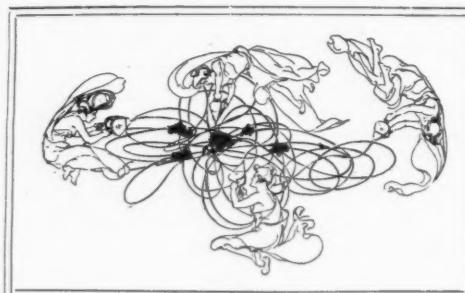
The Burlington railroad will run a line of automobiles from Lyons to Estes Park, Col., this summer. The first trip was made last week with thirteen people.

Charles Henry Page, of Worcester, Mass., who started last fall to encircle the globe in an Oldsmobile, is reported dangerously ill with typhoid fever in Singapore.

The Muskegon, Mich., Automobile Club has been organized with eleven members. T. D. Morgan is president, Dr. C. J. Dove secretary, and C. J. Durheim treasurer.

Roman Niswender, of Trotwood, O., has built an automobile that is said to have several superior points, and he is now looking for a manufacturer to handle it.

The Toledo, O., Automobile Club has re-elected Dr. L. A. Liffing president, and George Palmer, Jr., secretary and treasurer. Peter Gendron was elected vice president.



The Dayton, O., Automobile Club is to make a run to Franklin, a distance of 12 miles, May 21, and offers a chicken dinner to its members as an inducement to be there on time.

The Electric Vehicle Co., of Hartford, Conn., desires to appoint additional agents in western territory, and persons wishing to handle this line should write directly to the company.

William E. Morrison, of the Toledo, O., Automobile Club, has prepared a road map showing the route between Toledo and Ligonier, Ind., which is useful in New York-Chicago road trips.

Ehmann & Hobson, of Fresno, Cal., issue a catalogue of cycle supplies that contains many articles useful to automobilists. The firm claims to be the only cycle supply house in the San Joaquin valley.

While in France King Edward ordered a 24-horsepower Darracq car, thus complimenting the French end of the industry. The car has a four-cylinder engine, and the body is of the double phaeton type. It is covered with curved side glasses.

Milwaukee motorists are worried because the city ordinance says they must sound an "alarm bell or gong." If there were a comma after the word "alarm" it might be construed to include a horn, but there isn't, and the police have decided that horns are not sufficient.

A company has been organized at Rochester, Pa., to manufacture automobiles. The members are: W. H. Snyder, of Beaver, Pa.; W. A. Hartzell, W. E. Bonzo, Phillip Lee, C. C. Noss and Hartford P. Brown, of Rochester. Mr. Brown is president and Mr. Lee secretary of the organization.

FOUR WINDS

Owing to the scarcity of hotel accommodations in Ireland, the French firms of Panhard & Levassor, Mors, and Michelin have chartered a trans-Atlantic liner, which will be used to convey cars to Ireland and will then be used as a hotel during the stay of the automobilists in Dublin.

There will be one special train of four coaches run for the benefit of Paris-Madrid road race enthusiasts. A second train could easily be filled, but the railways refuse to run any more, owing to the difficulty of arranging a time card, the line being so crowded. Imagine an American railway making that excuse!

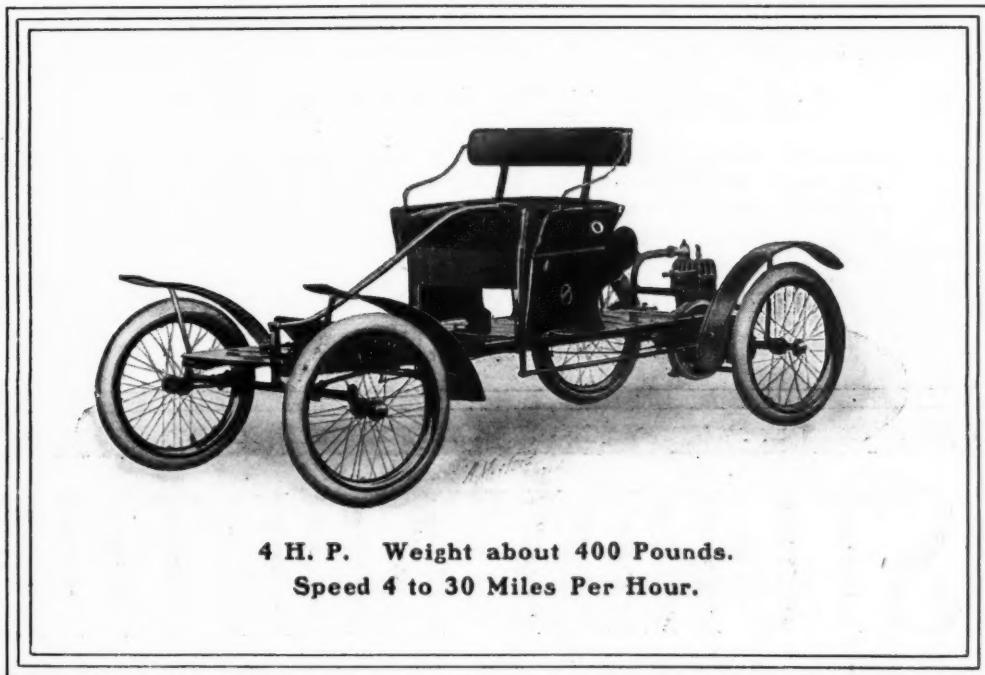
Hill, Clarke & Co., Boston, issue a machinery blue book which is a catalogue of modern machine tools compiled with view to giving a maximum of desirable information in a minimum of space. The completeness of the information, in connection with the small dimensions of the book, makes it convenient for reference.

About 2,000 policemen will be required to keep the Gordon Bennett race course clear during the race, and it is estimated that a million visitors will be in Ireland during that time. Wonder if the real Irish article is as good as the kind that patrol New York and Chicago.

An Irish automobilist accidentally ran into a horse and cart in Dublin, knocking the horse down but not injuring him. The driver of the cart was mollified by a small compensation and his receipt taken. In a few days the automobilist received a letter from the driver's wife demanding damages for the nervous shock she had experienced from witnessing the accident from a near-by window.

On next Memorial day there will be automobile race meets, hill climbing contests and endurance runs in different cities throughout the country. In each instance much local interest is reported. In the item of opening the season of the actual sport, at least, automobile racing is covering ground once so successfully traced by the sport of bicycling. The great Decoration day bicycle races which are no more are likely to be replaced by great annual automobile races which will become popularly recognized established features.

The Orient Buckboard PRICE \$375



**The Cheapest Automobile in the World
Everybody Should Have One**

Owing to the earnest solicitation of our Agents and the help of our improved facilities of manufacture, we have decided on and after this date to give the public the advantage of this popular vehicle at the above low price. Do not fail to secure the agency. It is a winner. :: :: :: Handsome catalogue free.

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WALTHAM, MASS.**

**PLEASURABLE
IS AUTOMOBILING**

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Banker Bros., 141-143
W. Thirty-eighth street.
Providence, R. I.—H. G.
Martin & Co., 196-200
Exchange street.

New Britain, Conn.—Con-
necticut Automobile Co.,
78 West Main street.

Asbury Park, N. J.—A. A.
Taylor.

Philadelphia, Pa.—Banker
Bros. Co., 629-633 North
Broad street.

Oneida, N. Y.—John Max-
well.

Attica, N. Y.—Hugh Mil-
ler.

Buffalo, N. Y.—J. A. Cra-
mer, 602 Main street.

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cott Boat Mfg. Co.



PRICE \$750

There are a hundred and one small points in the construction of the CENTURY TOURIST the working out of which caused much trouble and painstaking effort in our factory—much of this work was unnecessary. A fairly good automobile could have been produced without it. We did it in order to save the buyer trouble. We did it to make the

CENTURY TOURIST

a gasoline automobile of superior merit which would run with uniform merit everywhere, under all sorts of conditions. It has profited us, for the name "Century" has come to be a synonym for automo-
biling without trouble. The Century will suit you.

**Century Motor Vehicle Company
Syracuse, N. Y., U. S. A.**

**AUTOMOBILING
WITHOUT TROUBLE**

TOURIST

AGENTS:

Dayton, Ohio—G. W.
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Northwestern Motor Ve-
hicle Co., 112 South
Sixth street.

St. Paul, Minn.—Wm. Rin-
ker, 324 Wabash street.

FOREIGN.

Canada—Wilson & Co., 144
Bank street, Ottawa,
Ont.

Mexico City, Mexico—Leon
Wolff, Zuleta 10, Aparta-
do 394.

London, England—R. Rey-
nolds, Jackson & Co.,
Albert Gate Mansions,
Knightsbridge.

Lisbon, Portugal—Carlos
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THE STURDY NORTHERN



**12 YEARS OF PRACTICAL
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**NO "BACK KICK"
POSSIBLE.**

NO VIBRATION.

**THE QUIETEST,
SMOOTHEST RUNNING
VEHICLE on the MARKET.**

Price, \$800

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NORTHERN MANUFACTURING CO., Detroit, Mich.

THE PACKARD

Five Others Then a Packard

"I want to take this occasion to let you know how pleased I am with my Model F touring car.

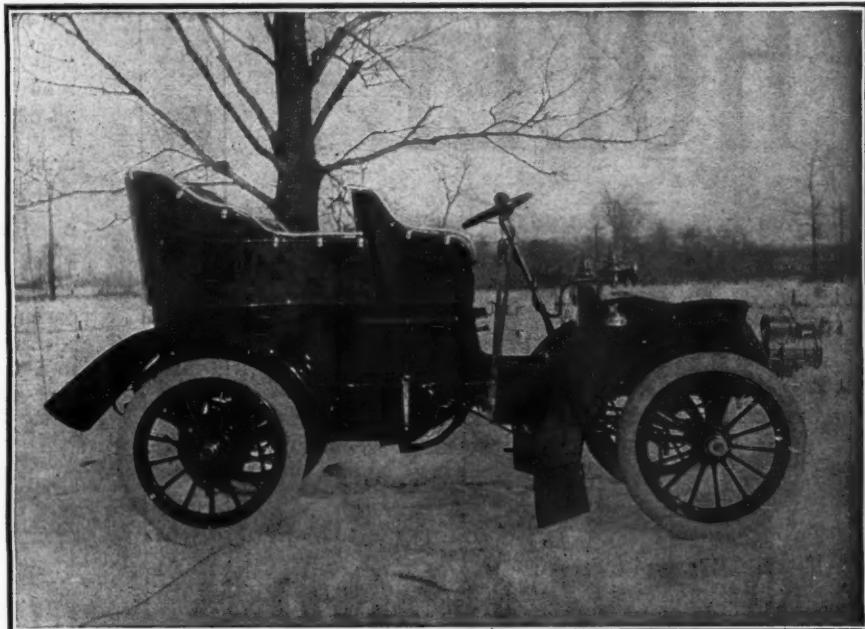
"I bought the car on August 1st and started for my shooting lodge in the wilds of Maine on the morning of August 2nd, arriving there the afternoon of August 3rd. The distance is about 225 miles, over some of the worst mountain roads in this part of the country.

"There were four passengers in the car and our actual running time was 15 hours. The car has been run about every pleasant day since, and has not made a single stop up to the present time.

"To say that I am pleased with this car is putting it very mild. I had no idea there was such a perfect car built. I am not strictly a novice in automobiles, as I have owned five others before I purchased this one."

Don't take our word for it—

Ask the Man Who Owns One.



PACKARD MOTOR CAR CO.

Licensed Manufacturers under Selden Patents.
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BAY CITY, MICH.: C. J. Bousfield, 818 Farragut St.
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SAGINAW, MICH.: A. W. Norris, 202 Genesee Ave.
SAN FRANCISCO, CAL.: H. B. Larzalere, 1814 Market St.
ST. PAUL, MINN.: Joy Brothers, 4th & Wabasha Sts.
MINNEAPOLIS, MINN.: Pence Automobile Co., 317-19 S. Third St.
WASHINGTON, D. C.: Nat. Cap. Auto. Co., 1124 Connecticut Ave.

You Need It In Your Business

The ELMORE AUTOMOBILE



is the most simple, practical and reliable car ever put on the market. It is propelled by the famous Elmore motor, whose two cylinders have fewer parts than a single cylinder of any other type.

Either engine will propel carriage should the other be cut out. (A very important fact.)

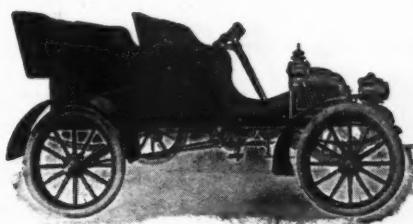
Has dynamo and storage battery. Motor will start and carriage will run on either. (Another important fact.)

You can charge the battery from the dynamo while running the carriage, which is another important fact.

Has had a practical test of over three years' manufacture.

Two first-class certificates in New York-Boston Endurance Run. Have been used in 1000-mile tours without trouble. And still more important facts.

Doctors' and Business Men's favorite car, Model 7, \$800
Tonneau Touring Car, Model 8, \$1400



.....LOOK UP! WRITE! INVESTIGATE!

ELMORE MANUFACTURING COMPANY

Member of National Association
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Clyde, Ohio

HOLLEY MOTORETTE

\$550.00

ALTHOUGH our Motorette is sold at a popular price, we invite comparison of our workmanship and material with cars selling at ANY PRICE. The motor we have manufactured in large numbers for one year and all parts are guaranteed to be interchangeable. It is located in front, under hood, with direct drive to transmission by shaft.

The spark coil is exactly the same as used by manufacturers of \$2,500 touring cars. We supply a 10-tube radiating coil, a tilting steering wheel, a brass trimmed hood, the Longuemare carbureter, a steering gear without back lash, and our upholstering and finish would do credit to a car selling at three times our price.

Agencies are being placed daily with the best known and largest dealers in the country. Shall we add your name to the list, which we will announce in the near future?

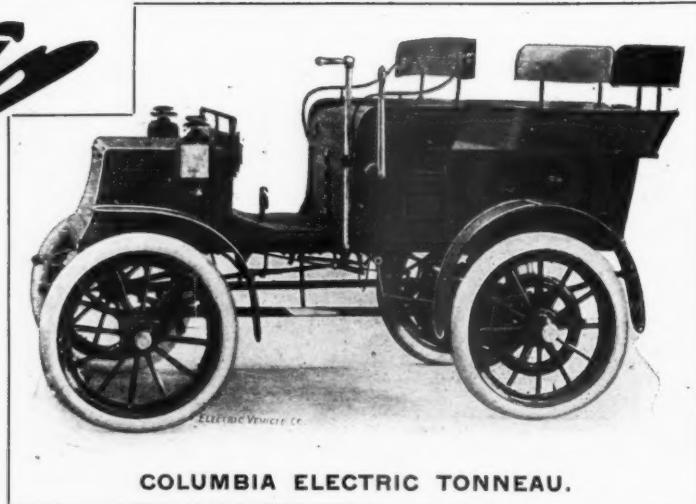
HOLLEY MOTOR CO.
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COMPRIZE THE ONLY COMPLETE LINE OF ELECTRIC AND GASOLINE VEHICLES FOR ALL REQUIREMENTS OF PLEASURE, GENERAL USE OR BUSINESS.

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ARE IN A
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THE STANHOPE

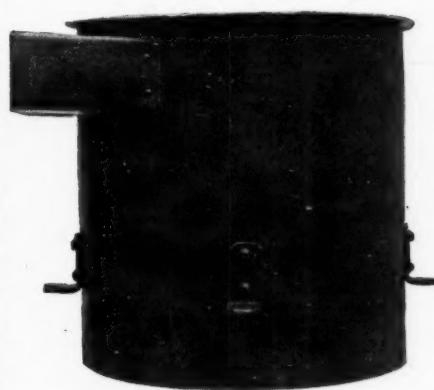
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Write for our catalogue.

THE BAKER
REPUTATION
IS WIDESPREAD

THE BAKER MOTOR VEHICLE COMPANY
CLEVELAND, OHIO, U. S. A.

Simplex Flash Boiler



The Best Boiler
Ever Invented.

Write for Catalogue
if you have Boiler
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THE STUDEBAKER &
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are thoroughly developed. No experiment. For instance, the model herein illustrated has been in regular use for over a year. A prominent customer writes:

"It is almost absolutely noiseless, climbs every hill I have put it at without trouble, is commodious, and I cannot conceive how anything could be better."

We build 9 h. p. and 16 h. p. cars, using front vertical motor exclusively—the only type to consider. The all-steel chassis permits the purchaser to select any style of carriage body. All working parts conveniently placed; substantial construction; material and workmanship of the highest order.



Easily the best built car in America

**Price of 4-Cylinder, 16
H. P. Chassis**

\$3,200

**including Tools, Spare
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The **Locomobile** Co. of America
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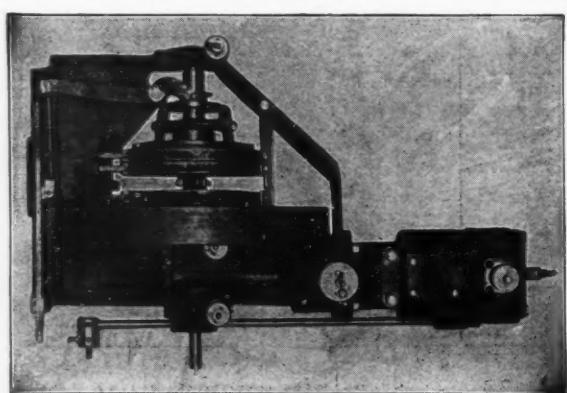
SOME APPEALING FEATURES

Lubrication is automatic, being started or stopped as the spark is switched on or off; governor acts on the mixture and also times spark automatically; valves removable and replaceable easier and quicker than on any other gasoline car; the spark plugs won't short circuit and are connected to cables by chains, instead of the usual ever-snapping wires; throttle on steering wheel permits of speeds from 6 to 40 miles per hour on high speed gear—this feature alone places our car far in advance of others, and makes the motor as flexible and easily controlled as a steam motor. Write, or visit any branch office for convincing demonstration on the road.

Motors=Motors=Motors

(WITH AND WITHOUT TRANSMISSIONS.)

SUITABLE FOR 1000 POUND VEHICLES.



All adjustments easily made.
The highest quality throughout.
Large bearings in every wearing part.
Every part in No. 1 Motor easy of access.
Cylinder 4½x6 inches.

BESIDE MOTORS, WE CARRY A COMPLETE LINE OF MOTOR CAR PARTS & FITTINGS FOR MANUFACTURERS, BUILDERS, REPAIRMEN AND USERS.

We sell the MONARCH Car—\$750.00; MORLOCK Runabout—\$650.00. SEE THEM!

P. J. DASEY COMPANY,

GET OUR 1903
CATALOGUE.

19 & 21 La Salle Street, CHICAGO, U. S. A.

Our 1903 Steam Cars
are the Result of
Unequaled Experience

Merrick Road Race, April, 1900.—Auspices Automobile Club of America.—The Locomobile establishes 25-mile Road Record for America.

The 1,000 Miles Trial, May, 1900.—Auspices Automobile Club of Great Britain.—The Locomobile wins two prizes.

Paris Exposition, 1900.—The Locomobile awarded two medals.

Eselberg Hill-Climbing Contest, June, 1901.—Auspices Austrian Automobile Club.—The Locomobile wins first place and first prize.

Pike's Peak.—Summit reached by Locomobile, August, 1901.—The most remarkable feat ever accomplished by an automobile.

500 Mile Endurance Run, New York to Buffalo.—Auspices Automobile Club of America, Sept., 1901.—Locomobile wins First-Class certificate.

Glasgow Reliability Trials, 535 Miles.—Auspices Automobile Club of Great Britain, October, 1901.—Locomobile awarded gold medal—highest award.

Pan-American Exposition, October, 1901.—Gold Medal awarded The Locomobile Company.

Speed Trials, Coney Island Boulevard, November, 1901.—The Locomobile wins the Gold Medal in its class.

Eagle Rock Hill-Climbing Contest, November, 1901.—Auspices N. J. Automobile Club.—Open Competition. Locomobile makes best time, wins first prize.

Roslyn Hill Contest, April, 1902.—The Locomobile wins Class "A" Cup.



The Locomobile is the best automobile

OUR STEAM CARS FOR 1903

are the result of over four years manufacture, in which time we have made and sold five thousand vehicles. The Locomobile steam car is comfortable and convenient and has won many prizes for speed, reliability and hill climbing in all parts of the world. A customer writes: "I am the owner of one of your earliest steam machines, No. 7, (built in 1899) which still gives good satisfaction." **Prices from \$650 Upwards.**

The Dos-a-Dos herein illustrated is only one of many sensible and handsome styles.

Conveniences—Special Features: Indestructible water gauge; Victor steam air pump, obviating all hand pumping and very useful for inflating tires; Victor steam water pump, a reliable auxiliary boiler feed; Ejector for convenience in touring; thorough lubrication of engine from one central oil reservoir; positive automatic oil pump for cylinders; forced draught for use in windy weather; superheated steam; solid and substantial construction; fine workmanship and handsome finish throughout. Write for catalogue or visit any branch office for demonstration on the road.

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Winner Everywhere**

Price \$650 Upwards

Liverpool Exhibition, May, 1902.—The Locomobile awarded medal.

Paris-Nice 600 Miles Caravan, May, 1902.—Locomobile finished third, being preceded only by two cars of greatly superior power.

Bex Hill Speed Trials.—Locomobile wins medal.

100 Miles Run—New York to Bridgeport.—Auspices Automobile Club of America.—Locomobile wins three Non-stop Certificates, 100% Records.

Staten Island Speed Trials, May, 1902.—Auspices Automobile Club of America.—Locomobile breaks World's Record, 1 mile, for steam cars. Gold Medal.

Chicago Auto. Club, 100 Mile Test, August, 1902.—Locomobile wins Non-stop Certificate, 100% Record.

650 Miles Reliability Trials.—Auspices Automobile Club of Great Britain, Sept., 1902.—Two Locomobiles won gold medals, highest award. Only American car to receive this honor.

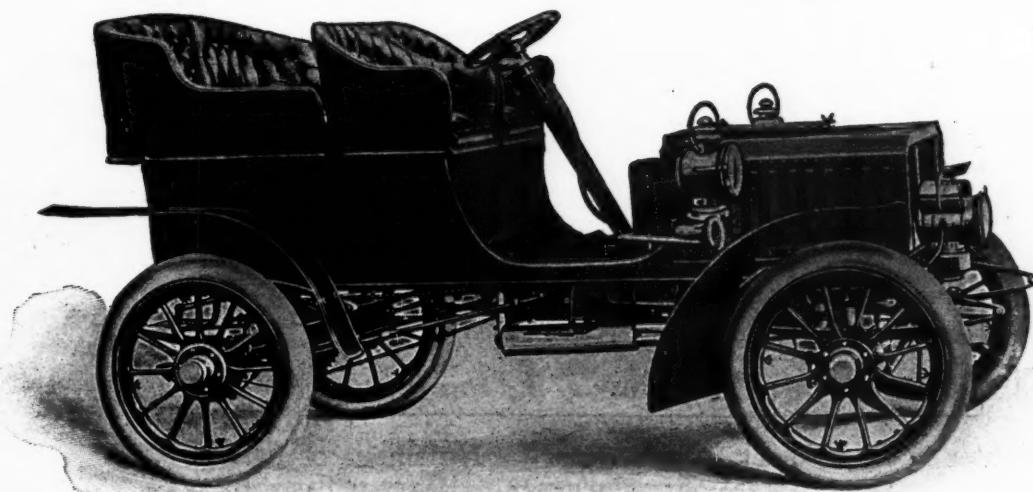
New York-Boston Reliability Run.—Auspices Automobile Club of America.—Four Locomobiles receive First Class Certificates.

Anniversary Run, October, 1902.—Auspices Automobile Club of Great Britain.—The Locomobile only American steam car to win Non-stop Certificate.

Eagle Rock Hill, 1902 Contest.—Open to all.—Again Locomobile makes fastest time and wins first prize.

BUFFALO'S PIONEER AUTOMOBILE MANUFACTURER

EXPERIENCE COUNTS AND WE HAVE HAD FIVE YEARS OF IT.



CONRAD GASOLENE 12 H. P. TOURING CAR. PRICE \$1250.00.

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Double Cylinder Vertical Motor,
Sliding Gear Transmission, Three
Speeds and Reverse.

★
Our touring car is unsurpassed in
quality and equipment by any.

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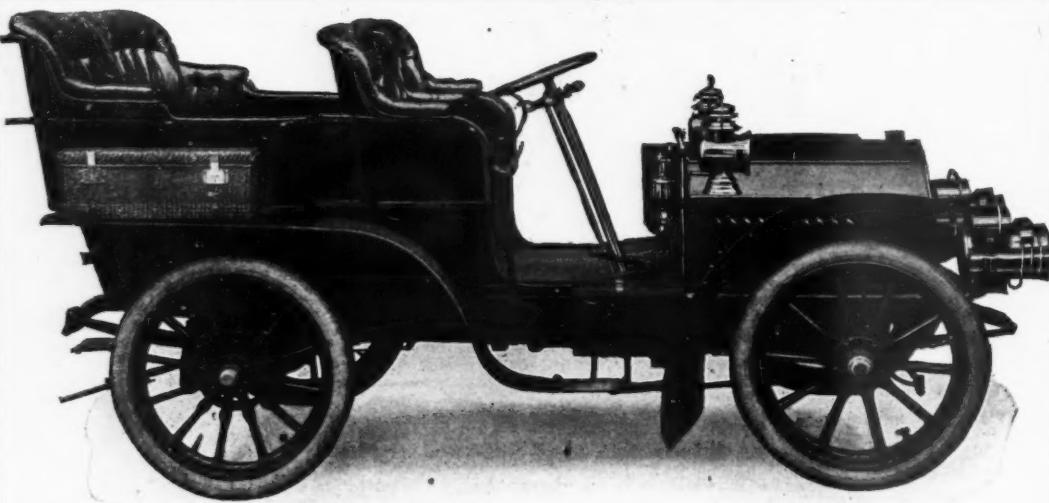
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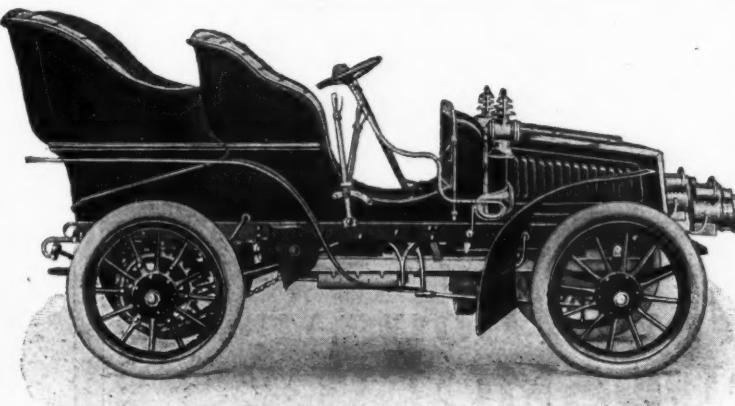
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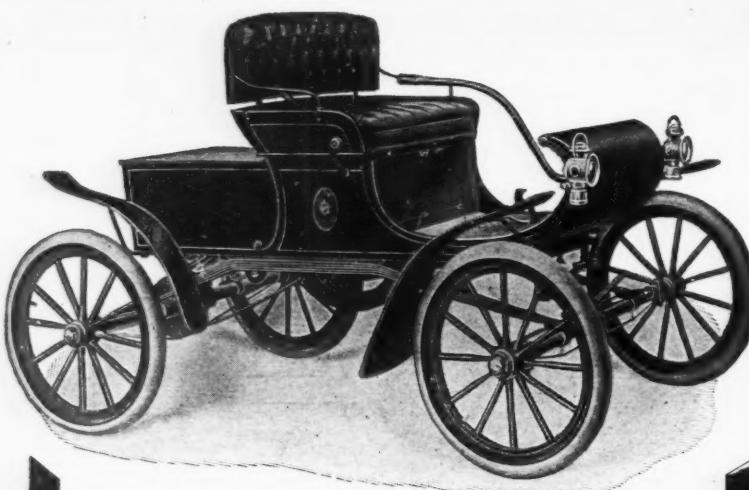
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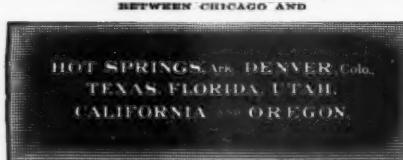
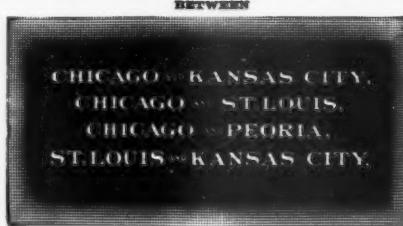
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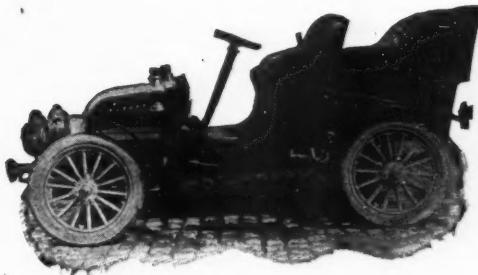
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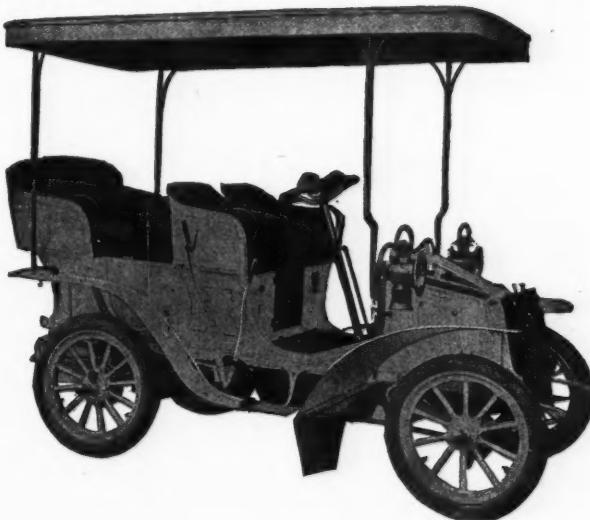
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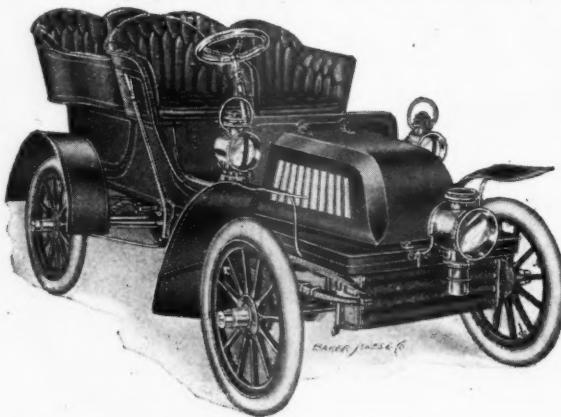
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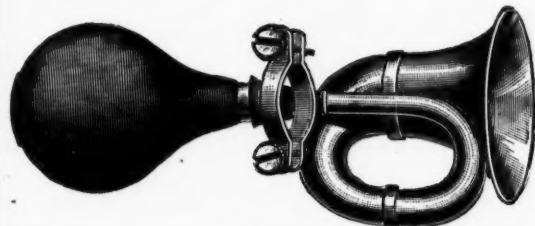
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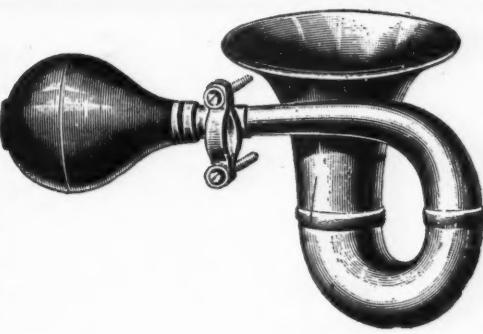
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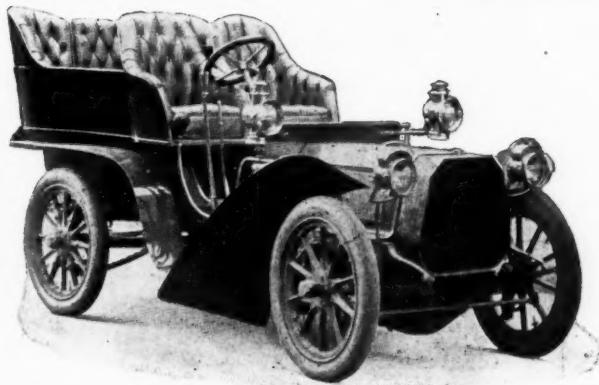


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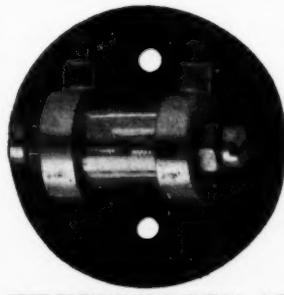
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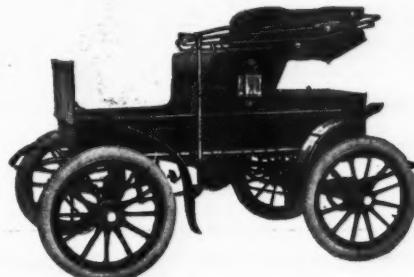
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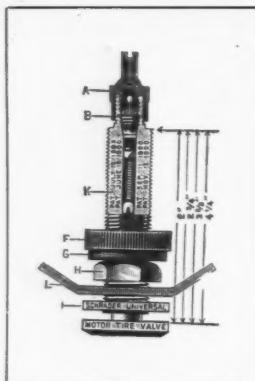
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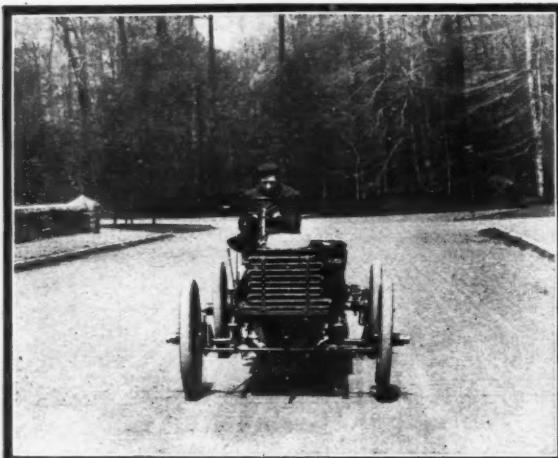
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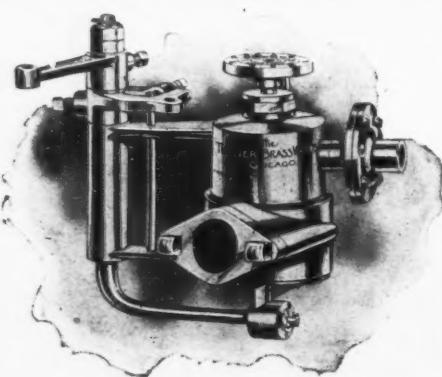


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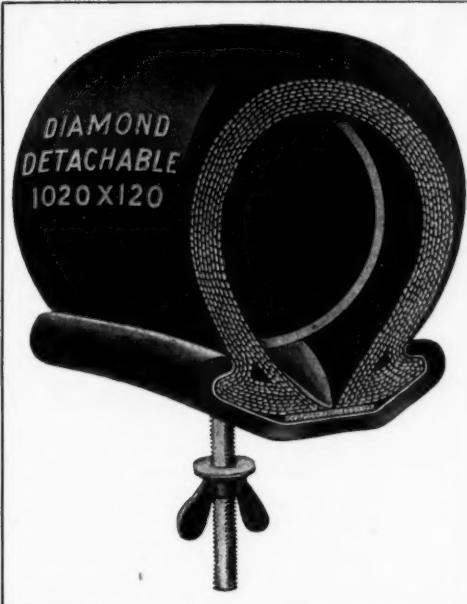
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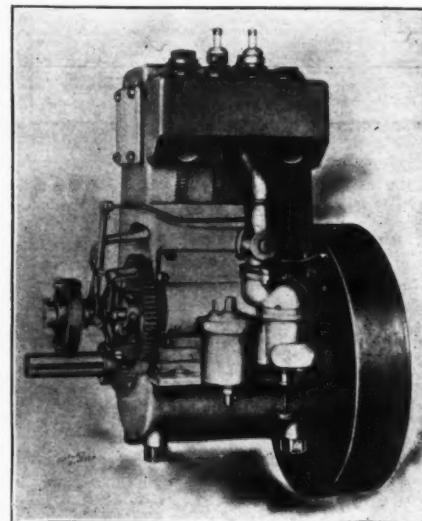
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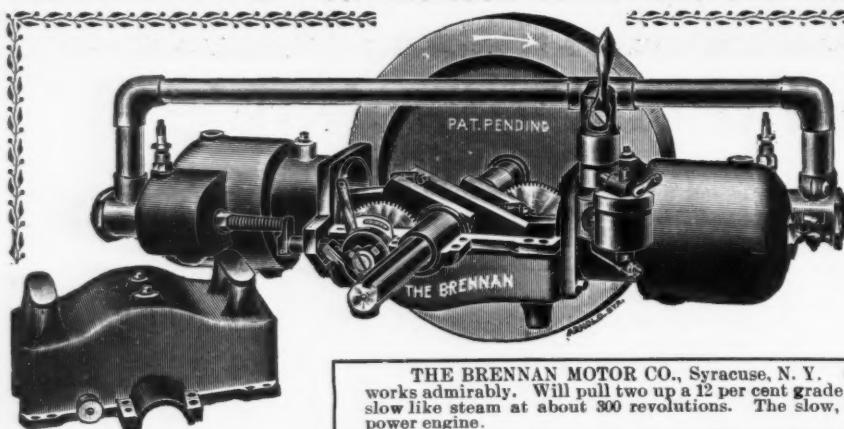
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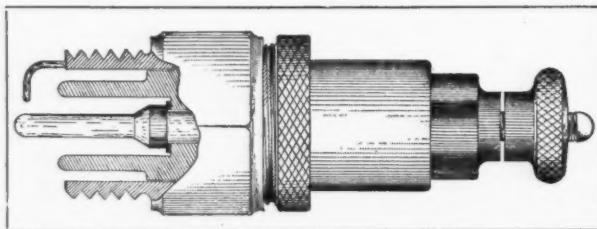
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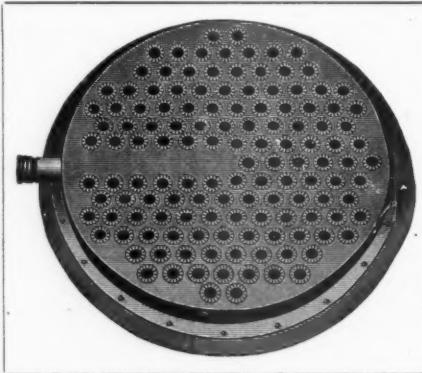
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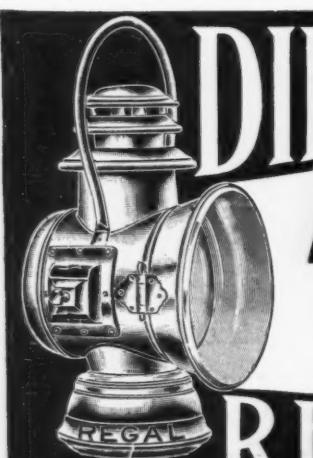
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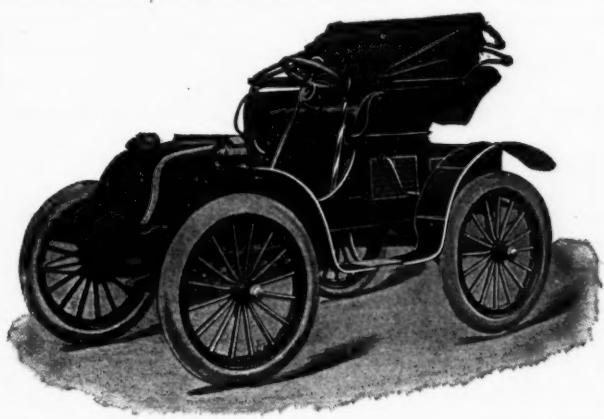
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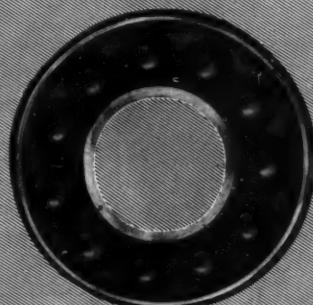
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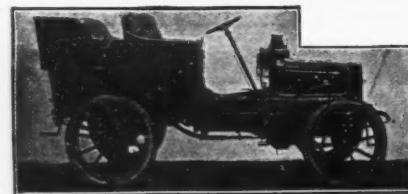


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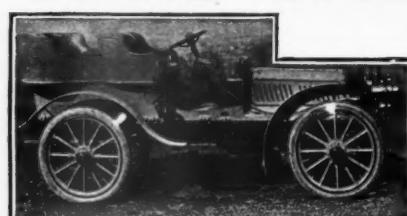
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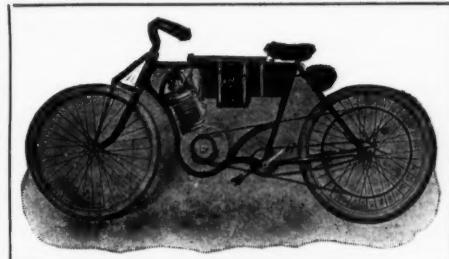
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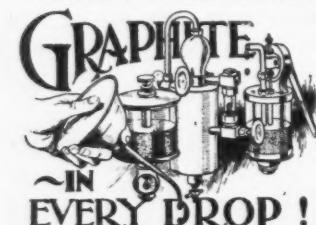
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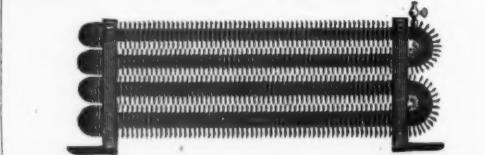
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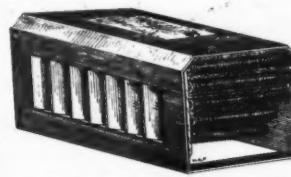
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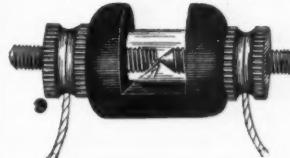


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FOR SALE—A two-story brick building, 80 by 23 ft., equipped with latest machinery for automobile and bicycle business; established for nine years; situated in city of 28,000 inhabitants. Want to sell on account of health. Address "A." care Motor Age. 24

FREEMAN WANTED—One who has had experience in the manufacture of automobile engines and transmission. Must be a first class man. Give experience and salary wanted. Address O. F. O., care Brownell & Humphrey, Detroit, Mich. 21

FOR SALE—Winton carriage, 1900 model; good running order; new tires; excellent reason for selling; price \$300. C. F. Earl, Reading, Pa. 21

FOR SALE—Peerless touring car, 16 h. p.; guaranteed to be in fine condition, having only been run about twelve hundred miles; purchased last fall. T. H. Wilson, 120 Bolton Ave., Cleveland, Ohio. 21

A \$1,400 Locosurrey at a bargain; in fine running order. Or will exchange for steam or gasoline runabout, with \$300 to boot. C. A. Wardle, 1354 Michigan Ave., Chicago. 21

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FOR SALE—15 horsepower Packard touring car, model F, made in August, 1902, and \$500 worth of accessories. Special tonneau, 54 inches wide. Front seats divided, 25 inches wide; will carry five comfortably. Three speeds, forward and reverse. Brass fender to protect radiator. Special odometer, cost \$75; eight sight feed McCanna lubricator; Rushmore searchlight, cost \$75; two electric lights in front and two in rear; two 70 ampere storage batteries; flexible tube horn. A gentleman's carriage in splendid condition and at a genuine bargain. Address Packard, care Motor Age, 1303 Michigan Ave., Chicago.

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WANTED—Position by chauffeur, thoroughly experienced all makes machines; reliable. L., care Motor Age.

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WANTED—More igniter troubles. We fix them with our improved Sta-Rite spark plug and Sparksee. Detroit Motor Works, Detroit, Mich. tf

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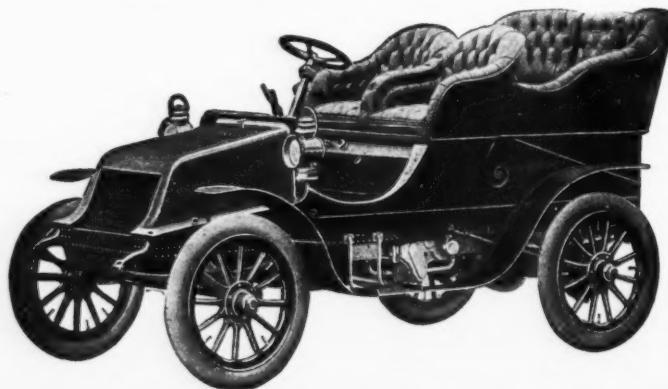
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